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The Effects of a Text Structure Intervention on  
Struggling Third Grade Readers' Comprehension of Expository Text

By

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Has been approved for

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### **Abstract**

The purpose of this study was to examine the effect of an intervention focused on expository text structure instruction, specifically compare-contrast and cause-effect, on the comprehension of struggling third grade readers within the science curriculum. To increase students' comprehension, 10 third grade students participated in this eight week study. During the study, the 10 participants met with the researcher thirty minutes a day, four times a week for eight weeks. The focus during this intervention concentrated on explicit text structure instruction. Students learned about compare-contrast and cause-effect text structure by identifying signal words in passages and completing text structure graphic organizers and text frame paragraphs. The results suggested that overall the participants' demonstrated growth in retelling of key ideas and comprehension of expository text.

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## **CHAPTER ONE: INTRODUCTION**

Throughout my teaching career I have noticed that elementary students have a strong interest in reading expository text. The nonfiction library in my third grade classroom was visited on a consistent and daily basis. Post-it notes and graphic organizers were filled with facts and new information that my students have learned from expository texts. However, this is where my students' learning had ended. It was evident that students did not comprehend this type of text at a deeper level. Comprehension questions and inferential reading questions that required written responses proved to be very difficult for students to answer. Further, content area text books used in the classroom were challenging for students to read and comprehend. After discussions with other elementary teachers and reading specialists regarding my concerns, it was apparent that the majority of our students struggled with comprehending expository text. Thus, I sought research articles regarding expository text comprehension in the primary grades. All articles stressed that if students are to meet the literacy demands of the future, they need to engage in authentic literacy tasks with expository texts. Further, research stated that students' reading comprehension skills improve when they acquire knowledge of expository texts' structural development and use them properly (Hall, Sabey, & McClellan, 2005). In addition, the Common Core State Standards Appendix A (2010) included research that affirms the importance of readers comprehending complex texts in order to meet the reading demands of college and future careers. Due in part to my collaboration and research I explored the following research question, "Does text structure instruction, specifically compare/contrast and cause/effect, improve struggling third grader readers' comprehension of expository text within the science curriculum?"

## Connection to Research

Well-structured text enhances recall and comprehension for those who have acquired sensitivity to structure, and many studies have demonstrated that instruction designed to teach students to recognize the underlying structure of text improves comprehension (Williams, 2005). Different types of texts are organized in different ways. Narrative text typically follows a single general structural pattern. Children develop sensitivity to narrative structure early. Conversely, expository text comes in a variety of patterns (e.g., description, sequence, compare-contrast, cause-effect, and problem-solution). Because of this, and also because it more often deals with unfamiliar content, expository text is generally more difficult to comprehend (Hall et al., 2005).

Students understanding of the various expository text structures is crucial. Recently there has been a drive for a greater presence of expository text in primary grade classrooms (Williams, Hall, Lauer, Stafford, DeSisto, & deCani, 2005). Therefore, research supports teachers delivering explicit text structure instruction in order for students to begin to comprehend expository text at a deeper level. The effectiveness of instruction in text structure in improving comprehension has been demonstrated at the upper elementary grades and beyond (Williams, Stafford, Lauer, Hall, & Pollini; 2009). Studies have demonstrated that students trained in text structure identified more main ideas, which indicated that the explicit instruction in structure facilitated the development of a well-structured mental representation. Additionally, studies have also suggested that students who received text structure instruction not only learned what they were taught, but were also able to demonstrate transfer of what they learned to content beyond that used in instruction.

According to the Common Core English Language Arts Standards for Informational Text (2010) students should be able to determine the main idea of a text; recount the key details and



explain how they support the main idea. Also, they need to describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). Further, students should be able to compare and contrast the most important points and key details presented in two texts on the same topic. In consideration of the standards that guide instruction, it is the role of the teacher to expose students to expository texts and to provide students with the proper instruction so they can develop an understanding of expository texts. This is crucial if students are to comprehend content area literacy in order to meet the literacy demands of the 21<sup>st</sup> century (Williams et al., 2005).

### **Overview of Project**

To test the hypothesis of the effects of expository text structure instruction on struggling third grade readers' comprehension, explicit text structure instruction was implemented to a small group. This study was conducted at an elementary school servicing kindergarten through fourth grade students. The small group consisted of ten struggling third grade readers; three males and seven females. All students exhibited comprehension struggles in their classrooms, especially within the science content area. Half of the group was receiving Leveled Literacy Intervention (Fountas & Pinnell, 2009) from the school's reading specialist for 30 minutes, five days a week. Leveled Literacy Intervention (LLI) is a small-group, supplementary intervention system designed to help teachers provide powerful, daily, small-group instruction for the lowest achieving students. This group of students seemed suitable for explicit, expository text structure instruction. The study was conducted during an eight-week period; the actual study required six weeks to implement. The first week of the study was dedicated to pretesting, and the last week to post testing. Weeks two through seven consisted of the implementation of the text structure instruction into the classroom. The goal was to teach students how to identify cause/effect and

compare/contrast text structures. The six week study was separated into two three week sections. Within the first section students received explicit text structure instruction on compare and contrast. The second three weeks focused on cause and effect instruction. For each text structure unit, it was expected that students would understand that text has a structure and how to identify a specific text structure. The first lesson included an introduction of the text structure through a text structure read aloud to discuss the structure as a whole group. During the following two lessons, I used the same read aloud to learn, identify, and highlight text structure specific signal words within the read aloud passage. Students learned how to use and complete graphic organizers, associated with each text structure, during and after reading the read aloud passage. Students answered text structure questions about the passages. Further, students wrote using text structures. Students used the text structure graphic organizers to write a text frame paragraph demonstrating their comprehension of the passage.

Thus, incorporating specific text structure instruction to improve expository text comprehension was the focus of this research study. These techniques were implemented to determine whether their collective use would align with the findings of recent research in the area of text structure and expository text. The following chapter will present reviews of research studies which were focused on improving students' expository text comprehension.

**Key Terms:**

**Expository Text:** Text often referred to as nonfiction and is used to describe, explain, provide information, or inform.

**Common Core Standards:** The standards describe the knowledge and skills in Language Arts and Mathematics that students will need when they graduate, whether for college or career.

## **CHAPTER TWO: LITERATURE REVIEW**

Recently, there has been a greater presence of expository text in elementary classrooms. Research suggests that students in the elementary grades are likely to be suitable candidates for the focused comprehension instruction of expository text that has been found to be successful with older students (Hall, Sabey, & McClellan, 2005). Expository text is particularly challenging because its content is usually unfamiliar. The ideas expressed often represent complex abstract logical relationships instead of the simple sequence of familiar events represented by most narrative text (Williams et al., 2005). Multiple structures are used in expository texts: description, sequence, compare-contrast, problem-solution, and causation. Teaching elementary students about the various text structures may increase the knowledge they gain, thus improving text comprehension (Block & Duffy, 2008). In addition, because students across grade levels struggle with reading and understanding nonfiction text, attention to increasing students' access to content-rich text in the primary grades has increased. Including texts as part of science instruction has positive effects on students' science learning (Cervetti, Bravo, Hiebert, Pearson, & Jaynes, 2009). This chapter will outline research associated with assisting students' understanding of expository text. The first collection of research presents the importance of expository text comprehension. Next, the benefits of understanding text structure to support comprehension of expository text will be summarized. Finally, research is examined to determine the benefit gained from including texts and reading strategy instruction in the science content area.

### **Expository Text Comprehension**

The use of expository text in the classroom is vital if students are to acquire the necessary skills to gain understanding of informational text they encounter in content area studies in the upper grades, in information they encounter on the internet, and in every day reading of newspapers, magazines, and documents (Benson, 2002). By providing students with the opportunity to interact with nonfiction materials in the classroom, they not only become familiar with how to read such text effectively and efficiently, but students gain content knowledge which permits them to interact and participate in different social contexts. There is little data to document the amount of interaction and exposure elementary students have to non-fiction texts in the classroom (Benson, 2002). This section explores the importance of expository text in the classroom.

Duke (2000) conducted a study to examine the type and scope of expository experiences offered to children in the early grades and to compare informational text experiences and print environments across first-grade classrooms. Duke's study is based upon the idea that students' knowledge of discourse has significant influence on the way they are perceived by others, their capacity to interact in various social contexts, and the prospects presented to them in the community, school, and work place. The researcher predicted that informational text was scarcely utilized in first-grade classrooms.

The independent variables included a letter to the participating teachers, explaining the guidelines and information about the study, excluding the researcher's hypothesis about the lack of expository texts in elementary classrooms. Classrooms were observed 4 full days over the school year. The dependent variables were the researcher's recording of the following information: (a) displayed print on walls and surfaces, (b) classroom library print materials, and (c) activities involving print. Each text was coded for genre type and tallied between the

researchers for print data, classroom library data, and for written language activity data. All documentation was then analyzed.

Duke recognized the significance of students' exposure to expository texts in the early grades. Her study is built upon three basic assumptions about genre development: First, experiences with genre allow students to read and write in this genre. Second, in order for genre knowledge of informational text to develop ample exposure and experience with this type of text is necessary. Third, children develop genre knowledge from an early age.

With these assumptions made, the researcher described and observed 20 first grade classrooms in the Boston areas. The researcher chose 10 school districts, from 50 in the Boston area, based on poverty, level of education, and per capita income. Ten of the classrooms in this study were pinpointed from among the highest socioeconomic (SES) school districts, while the other 10 classrooms were picked from among the 4 of 6 lowest SES districts. Classrooms were randomly chosen from 17 of the 19 elementary schools, while in the 18<sup>th</sup> school, two classrooms were selected randomly. In the 19<sup>th</sup> school, one non-bilingual classroom was chosen.

In the researcher's observations of the 20 first-grade classrooms in the Boston area, she found that there was generally a dearth of informational text. There were little informational texts in classroom libraries in written activities. In particular, low-SES classrooms lacked informational texts. In the comparison to the high and low-SES classrooms, the researcher observed that high-SES classrooms had much more informational texts (738 books) displayed in their classroom libraries than did the low-SES classrooms (449 books). Of displayed print on the walls and surfaces of the classrooms, Duke found that since low-SES rooms had less

informational text to begin with, the classrooms had a mean of 4.3 informational texts displayed as compared to the high-SES rooms which had a mean of 14.5 informational texts displayed.

Observations of written language activities revealed that the total time spent with non-fiction texts was 3.6 minutes per day in these first grade classrooms. Seven of the 20 classrooms did not utilize information texts on any of the four days they were observed by the researcher. Another seven of the 20 classrooms utilized less than an average of 5 minutes per day with expository texts, while the remaining six classrooms interacted on an average of no more than 10 minutes per day with expository texts.

This study highlighted the lack of exposure and interaction with expository texts in 20 first-grade classrooms in the Boston area. Because of this lack of exposure and experiences with expository text structure, low-SES students were at a particularly disadvantage to acquiring discourse knowledge of this genre of text, and thus, were more likely to fall behind in expanding their overall knowledge base. For this reasons, it is imperative that elementary classroom teachers include expository texts in their classroom library, on walls and surfaces, and incorporate informational texts in written and oral language activities.

Unlike the Duke study, Smolkin and Donovan (2000) determined that the very nature of informational text structure invited students' interaction and engagement with text. For this reason, the researchers decided to examine how non-fiction read alouds might promote a higher level of student engagement than the usual narrative read alouds utilized in many elementary classrooms. The authors believed that different amounts and types of talk would occur through the use of different types of texts and hypothesized that comprehension would increase if students were able to interact with the read alouds. The authors reviewed the responses of first

grade students to informational text read alouds as compared to narrative text read alouds. The independent variable consisted of six informational text read alouds and six narrative read alouds that were shared with two different first grade classrooms over a two-year period. The dependent variables were the responses of first graders and their teacher to the two types of books shared in class.

The year one sample was composed of first grade students from a lower-middle class background, in a public school situated on a military base. The year two participants were first graders from a different school, with higher socioeconomic backgrounds.

The responses of the year one students were tape recorded as soon as the book was read aloud by the teacher. Recording stopped at the completion of the read aloud time. The teacher read the books aloud without any teaching of comprehension strategies being provided during read aloud time. The books were incorporated into the twice a day, interactive read aloud gatherings. The same procedure was followed in the year two study.

The results of the year one students' responses to the six expository text read alouds revealed that 93% of total text responses were attributed to the expository texts, with 7% of the responses about the narrative text read aloud. 78% of the teacher's responses, or discourse moves, regarded the non-fiction read aloud and 22% of the time regarded the fiction story.

After the responses of the students and teacher were coded and recorded, Smolkin and Donovan repeated the study on a second class of first graders from a different school who were of a higher socioeconomic status. The findings documented a similar pattern of responses to the expository and narrative text read alouds, with 85% of the responses related to the non-fiction

read aloud and 15% related to the fiction read aloud. Eighty-nine percent of teacher responses were about the expository read aloud and 11% the fiction book.

The authors explained the difference in text responses to the particular functions of expository and narrative texts. The researchers claimed that expository text prompts student engagement and interaction more than narrative text. Because of its structure, students were challenged to clarify content vocabulary as they listened so that understanding could be obtained. The interactive nature of expository text in turn promoted comprehension acquisition.

In addition to the structure of expository text actively engaging students, it also aids comprehension, as indicated in the previous study. The active engagement and interaction of the text is essential for an increase in comprehension, as well as the instruction of specific text features over time. The qualitative case study conducted by Maloch (2008) examined interactions of students with informational texts across the course of the day in a second grade classroom. The purpose of the author's study was to explore how non-fiction texts were used in this elementary classroom and the methods the teacher employed to scaffold students' understanding of the texts. Given the lack of research on how informational text is used by teachers and students, Maloch attempted to clarify exactly how non-fiction texts were used within a culturally diverse second grade classroom.

In order to distinguish the use of informational texts by students and teachers in elementary school, Maloch studied a classroom composed of fifteen second grade students of diverse cultural backgrounds and their teacher. This classroom was reflective of the entire school population that drew children from working-class to lower-income neighborhoods. Eighty-eight percent of the students at this school received free or reduced lunch. Eleven of the students in



this classroom were Latino, all of whom spoke fluent English, two were European-American and two were African-American students. Nine of these participants were boys and six were girls. Data was collected in the classroom one to two days a week over a five month period, from January to May.

During this five-month period, the researcher observed class read alouds of non-fiction texts that included discussions before, during, and after the read aloud, independent reading time, and guided reading groups. The researchers focused on the students' discourse and interactions at these times, as well as on how the teacher incorporated informational text in the classroom and how she supported students' understanding of text. Data collection consisted of classroom observations of the specific activities, video/audio taping of the class, lesson plans, teacher's notes, student writing, student work, and student assessments. The researcher also formally interviewed and audio taped the teacher twice for two hours. The first interview focused on the researcher's questions about the curriculum, planning, decisions about content choices in the literacy block, and her thoughts about students. The second formal interview centered on the teacher's use of non-fiction texts in her classroom as well as students' preference for different genres of texts and her goals for independent reading, read alouds, and guided reading lessons. In addition, eleven students were interviewed and audio taped for 30 minutes, and the interviews were later transcribed. Students answered questions about peer relationships, their teacher, school, their classroom, curriculum, and their self-perception as readers and learners.

The author determined that the second grade readers and learners in this classroom experienced and learned about non-fiction features over time and within their learning community, rather than in isolated lessons. The researcher noted three themes that became apparent about the use of information text in a culturally diverse classroom after examination of

her field notes in this qualitative research: 1) Students were provided time to read a variety of non-fiction texts. 2) The teacher guided student understanding of different text level difficulty by targeting key vocabulary, concepts, and promoting discussion to facilitate understanding. 3) Explicit teaching and talk about non-fiction text features occurred as text was encountered and experienced independently and as a classroom community.

The ability to read informational texts is valued in multiple settings in advanced schooling, community, and work. The failure of schools in the U.S. to develop adequate informational reading skills in many students have long been recognized (Duke, 2000). We teach children how to read using fiction, helping to develop a story structure for comprehension. In the early grades of school, children are immersed in fiction 80-90% of the day. They read fantasy and folktales and create imaginative stories. They learn that stories have characters, a setting, and a problem that the character tries to resolve during the story. The instructional exposure to nonfiction texts is not enough (Benson, 2002). It is critical that teachers begin explicitly teaching nonfiction text structure to students so they develop an understanding of expository text.

### **Text Structure**

Preparing children to comprehend expository texts is integral to success in later schooling (Hall et al., 2005). The way in which a text is written can help or hinder comprehension. In order for students' to gain, assess, and apply information successfully from nonfiction texts, it is necessary that they understand how this genre is organized (Benson, 2002). Expository texts are predictable in their presentation, in that this genre presents information to the reader as its main goal (Benson, 2002). This section discusses studies that have been conducted to examine if instruction in text structure aids students' comprehension of expository text.

Lee (2004) designed an experimental study to determine if elementary students' reading comprehension of informational texts could be bolstered if instructed in the genre specific text structure. Furthermore, by performing this study, Lee hoped to persuade elementary teachers to incorporate more informational texts in their classrooms and encourage them to instruct students in the text structure of non-fiction text so as to improve comprehension and content knowledge.

The independent variable was collaborative strategy instruction: the experimental group of fifth grade class received collaborative strategy instruction of informational texts while the control class did not receive instruction in reading strategies. This dependent variable consisted of a comprehension post-test.

This study occurred in a poor urban district within a large metropolitan city. The participants in this study consisted of 53 fifth graders. The experimental group was composed of 27 students, 10 boys, and 17 girls. Five of these students were exempt from the study because they received English as a Second Language (ESL) support during reading while another three children were absent during testing. Of the 19 students in the experimental group, four were fourth graders and the remaining 15 were fifth grade students.

Twenty-six students, 14 boys and 12 girls, composed the initial control group. Five students were absent from one testing period while four students were not included in the study because they received ESL support during the testing period. Therefore, the final control group consisted of 17 fifth grade students.

The experimental class was divided in half so that a teacher and a teacher-librarian could adequately teach 8-10 students for 40 minutes in the instruction approach for 10 sessions between February and May. The control class received regular instruction that did not include

strategy instruction on the reading of informational texts. Each class completed a post-test following the teaching sessions.

After the implementation of this study, the author compared the experimental class to the control class and noted no significant difference between the two classes on the pre-test. A significant difference was noted between the two classes on the post-test. The comprehension scores of the experimental class increased more than that of the control class. The teachers of the experimental group noted the students' lack of strategy knowledge to utilize in the reading of expository texts at the beginning of this study. This study emphasized that elementary students were capable of reading informational texts provided that they are exposed to it on a regular basis and are explicitly taught strategies that help them navigate the text structure effectively so that they can derive meaning from the text.

The study conducted by Lee (2004) highlighted that elementary students were able to comprehend informational texts. Williams et al. (2005) further studied expository text by investigating expository text comprehension in the primary grades. The researchers examined the effectiveness of an instructional program designed to teach 2<sup>nd</sup> graders how to comprehend compare-contrast expository text. In addition, the researchers also explored if instruction focused on text structure detracted from the amount of content knowledge that would have been acquired had the text structure instruction not been present. Based on research conducted in this area with older students, the researchers believed that students in the primary grades were likely to be suitable candidates for the focused comprehension instruction that has been determined to be successful with older students.

The independent variable was the instruction: text structure instruction versus traditional instruction versus no instruction. The dependent variables for the pretest session were the scores of a commonly used educational achievement test that assesses word identification and passage comprehension and the scores of a listening comprehension assessment. During the second pretest session, students were administered a test to assess their ability to perform several of the tasks to be taught in the text structure program: recall of clue words, written generation of sentences based on the graphic organizer, recall of compare-contrast questions, and their ability to write a well-structured summary of compare-contrast paragraphs. Finally, students were assessed on their content knowledge of vocabulary concepts. The posttest consisted of assessing students in the same areas as the pretest. In addition, students orally responded to paragraphs that were dissimilar to the instruction materials to determine the amount of transfer that was attained.

The sample consisted of 128 second-grade students from three elementary schools in a large metropolitan area. The schools were similar in terms of demographics. The enrollment across the three schools included 57% Hispanic, 41% African American, 1% Caucasian, and 1% Asian/Other. Only six percent of the students were enrolled in either part-time or full-time special education services. Ten second-grade teachers volunteered to participate. Their classrooms were randomly assigned to condition (text structure, content only, no instruction). The teachers taught the program to all students in their classrooms.

Both instructional programs used a comprehensive animal encyclopedia, trade books, and nine carefully constructed compare-contrast paragraphs. Each paragraph included three to five comparative statements about two paired target animals. Within the text structure program, the content goal was to teach students how to classify animals according to four of the basic features that determine which of the five classes of vertebrates the animal belongs to. The researchers

explained that the first lesson focused on two familiar animals to familiarize students with the procedure. The remaining lessons focused on two of the five target animals. A lesson began with an introduction of clue words, a teacher reading about two target animals to prompt discussion and stimulate motivation, and a teacher introduction of vocabulary concepts related to features of animal classification. Students then read the compare-contrast paragraphs focusing on the similarities and differences found in the paragraph. Next, students organized the paragraph's content by using matrices. After making a judgment about whether the animals were the same or different on that feature, they provided a well-structured comparative statement that matched the content organized in the matrix. Students were introduced to three compare-contrast questions to help organize the statements generated from the matrices. The questions were reviewed and then their matrix sentences were written in a t-chart. Finally, students used the t-chart to write summaries of the text within a given paragraph frame.

The content program focused on the importance of the content. Therefore, students focused on general information and interesting facts about the animals. After eliciting students' background knowledge and reading aloud about animals, students organized the content from the animal texts into an information web. From here, students were presented with the same vocabulary concepts as the text structure program. The concepts were explained, discussed, and then generated into student sentences. After that, students read a compare-contrast paragraph and then reviewed their information web and paragraphs and shared information they had learned about the two target animals. Finally, students used the information from the web, paragraph, and class discussion to complete a paragraph using a frame provided. However, this paragraph did not focus on compare-contrast text structure.

The researchers concluded, based on analysis of the strategy measures (recall of clue words, location of clue words, matrix sentence generation orally and written) that the text structure group scored significantly higher than either the content or the no instruction group. There was no difference between the content and no instruction groups. However, the strategy measures of the recall of compare and contrast questions and information in the web indicated that there was no effect from the treatment.

The authors determined that it was possible to teach primary students about text structure to improve their text comprehension. Moreover, they discovered that students who received the text structure program not only learned what they were taught but were also able to demonstrate transfer of what they had learned to content beyond that used in instruction. Further, the results of the three oral measures indicated that the text structure group was superior to the other groups on content that was closely aligned to the instructional materials and also on unrelated content. Ultimately, the students were not merely taught the content of the instructional program, but also how to process a particular type of expository text.

In addition, the author's conclusion that the text structure instruction did not detract from the amount of content learned was derived from the findings of the outcome measures, vocabulary concepts. The other content outcome measure, detail questions, did not demonstrate a difference among the three treatment groups, a result that could neither confirm, nor disconfirm their conclusion. The fact that the scores of all three groups were low, suggested that students did not acquire much of this tangential information from either the text structure, or the content program. The researchers speculated that children with higher general reading ability were able to learn the new vocabulary in the program more easily than other children.

Overall, the researchers' findings indicated that as early as second grade, children could benefit from systematic and focused comprehension instruction. Even at a time where children may not have complete control of word recognition or sentence fluency, they can still be exposed to comprehension instruction.

The Williams et al. (2005) study focused on the effectiveness of an instructional program designed to teach 2<sup>nd</sup> graders how to comprehend compare-contrast expository text. The following study, conducted by Hall et al. (2005) investigated the effectiveness of an instructional program designed to teach expository text structure awareness during guided reading.

The researchers conducted a study to investigate the effectiveness of an instructional program designed to teach second graders an expository text comprehension strategy during guided reading instruction. The researchers' hypothesis was that text structure was an effective strategy for promoting expository text comprehension. The independent variable was the type of instruction: text structure program versus content program versus no instruction. The dependent variables measured word knowledge and comprehension. This was conducted through pre and post assessments. Pre-assessments used were standardized word knowledge and comprehension assessment, and a pre-assessment specifically written to assess the particular aspects of the instructional program (summary of compare/contrast text, clue words, matrix, and vocabulary). The post-assessment consisted of the same measures as the pre-assessment as well as several transfer measures (summary of an unstructured text, overall use of clue words, and conceptual understanding of compare/contrast).

The study was conducted in a Title One elementary school involving seventy-two second graders in five classrooms. There were 20 guided-reading groups, including 46 males and 26



females. The text structure group included 31 students in eight guided-reading groups. The content group included 17 students in four guided-reading groups. The no instruction group included 24 students in eight guided-reading groups. Both instructional programs used two types of text: informational books from a guided-reading collection based upon the level of the readers within the group, and well-structured compare/contrast paragraphs written by the authors. The paragraphs were used to compare and contrast the animal characteristics related to classification. The results of the pre-assessment diagnostic tool measuring word knowledge and comprehension indicated no significant differences between the three treatment groups. Similarly, all five aspects of the pre-assessment concluded no significant differences as a function of instructional condition.

The text structure program consisted of three main sections: introducing the text to students, reading the text, and discussing and revisiting the text. First, the teacher introduced the children to the content of the book, major vocabulary words, and clue words. Then, students read the text aloud from their own copy. Students were asked to mumble read so that teachers could tune in to individual students reading. After reading the text, the teachers discussed and revisited vocabulary words and concepts within the text. Also, students completed a graphic organizer (matrix) that highlighted the compare/contrast structure. Then the teacher prompted the students to reiterate the comparisons they had read in the text. The final step was to create a written summary of the text.

The lessons for the content program were similar to the text structure program in terms of materials, length of instruction, and overall lesson sequence. While the focus of the text structure program was to highlight the structure of the text as a means for facilitating comprehension, the

main focus of the content program was content; or factual information about animal classification, and associated vocabulary.

Based on the results from the post-assessments, this study suggested that text structure instruction was an effective strategy to improve second graders' comprehension of expository texts. Students who received text structure training were able to effectively use two expository text comprehension strategies, gain a conceptual understanding of compare and contrast, and produce well-structured summaries better than those students who received content instruction or no instruction.

Hall et al. (2005) concluded that text structure instruction was effective when improving second graders comprehension of expository text. While text structure instruction studies have demonstrated an improvement in students' comprehension, the following researchers wanted to investigate the effectiveness of text structure instruction with at risk students to see if the findings would be similar. Williams, Nubla-Kung, Pollini, Stafford, Garcia, and Snyder (2007) conducted a study to evaluate the effectiveness of a cause-effect instruction program for second graders at risk for academic failure.

Fifteen classroom teachers from three elementary schools volunteered to participate in the study. All schools were categorized as Title I schools. Ninety-three percent of the students received state aid in the form of free or reduced lunch. The total enrollment across the schools included 76.5% Hispanic, 22% African American, 0.5% European American, and 1% Asian or other. The teachers were randomly assigned to one of three experimental conditions: a text structure program, a content only program, or a no-instruction control. Two hundred and forty

three students completed the study, and each student received the instructional program as taught by their classroom teacher.

The dependent variables for both the pre and posttest measured students' word identification and comprehension skills using the Word Identification and Passage Comprehension subtests of the Woodcock Reading Mastery Test-Revised (Woodcock, 1987). The pretest and posttest also included three strategy and two outcome measures. The strategy measures included locating clue words in a paragraph, locating cause-effect clauses, and recalling the cause-effect questions. The outcome measures assessed knowledge of vocabulary concepts and ability to provide well-structured cause-effect statements in response to comprehension questions based on a one cause-effect paragraph. In addition, the posttest included a comprehension outcome measure that required students to answer three types of questions (non-causal, cause, and effect questions) concerning a series of paragraphs that involved social studies content. Several of the measures required oral responses.

The goal of the instructional programs was to teach students about three historical communities in the United States- specifically, about homes, schools, and jobs in these communities. Both programs used biographies, other trade books, and specially constructed cause-effect target paragraphs. The programs contained three units, each focusing on one historical community. There were 22 lessons in all. As in previous studies conducted by Williams et al. (2007), an explicit and structured instructional model was implemented that included explanation and modeling by the teacher and guided and then independent practice. The text structure program's lessons included an introduction to the concept of cause and effect, an introduction to clue words and how to use them to identify cause-effect paragraphs, presentation of vocabulary words, trade book read-aloud and discussion, completion of a community chart

and cause and effect questions, and a read-aloud and analysis of the target paragraph. In addition, students completed a graphic organizer for the target paragraph, answered three types of comprehension questions about the target paragraph, and reviewed the strategies as well as the content covered.

Similarly, the content-only program taught the same content, used the same materials, but did not focus on cause-effect structure. The lessons included the discussion and completion of a KWL chart, presentation of vocabulary words, trade book read-aloud and discussion, completion of a community chart and a graphic organizer focused on information learned during the lesson. In addition, students read-aloud the target paragraph, answered the same comprehension questions, completed a journal entry about information learned, and reviewed the content learned in that lesson.

The results of the strategy measures indicated that the text structure group scored higher than the other groups on the effect question. This group did not score higher on the cause question; perhaps the students were sufficiently familiar with the cause concept before the instruction began. The explicit instruction provided by the text structure program, however, was necessary for the more difficult concepts. The performance of the two instructed groups did not differ on any of the three content outcome measures; thus, text structure instruction can be accomplished within the framework of content area instruction without a loss in the amount of content acquired.

When analyzing the comprehension measures, three of the four that assessed transfer determined that students who had been taught via the text structure program performed significantly better on questions that involved effects than did students who received the content-

only program. However, the text structure group students were no better than the other students when answering questions about causes. One of the four transfer paragraphs did not demonstrate the positive effects of the text structure training on the effect question. This was possibly due to the fact that its content was rather abstract. Overall, this study supports previous findings on the effectiveness of explicit instruction at the primary-grade level.

The previous studies conducted by Lee (2004), Williams et al. (2005), Hall et al. (2005), and Williams et al. (2007) highlighted expository text structure instruction and its effect on reading comprehension for elementary students. Within these studies graphic organizers were used to support students' understanding of text structure. In the following study, the researchers focused specifically on how the use of a graphic organizer, a story map, improved the comprehension of expository passages. Stagliano and Boon (2009) examined the effects of using a story-mapping procedure to improve and enhance the reading comprehension skills using expository text passages for three fourth-grade students with learning disabilities.

The authors' hypothesis was that story-mapping was an effective way to enhance reading comprehension in students with a learning disability. Story mapping was used across grade levels and content areas and has proven to be successful in the area of reading comprehension. The independent variable was the type of instruction: traditional instruction versus text structure instruction through the use of a story map. The dependent variable measured students' reading comprehension. This was conducted by assessing students' comprehension performance on passages taken from the *Read Naturally* series (Ihnot & Ihnot, 2007).

The sample consisted of three male fourth grade students with learning disabilities. The students had no previous exposure or instruction using a story-mapping procedure. Before the

start of the study, researchers assessed participants to determine which level passage they would begin by using the *Read Naturally* series. Further, researchers used previous test scores from other assessments to determine the starting passage prior to assessing.

The study occurred during a two-month period and consisted of 24 sessions. Reading passages were selected from the *Read Naturally* series. The passages were expository texts and were selected based on each student's current reading level. Passages included one to three short paragraphs. Four multiple-choice questions followed each passage, in addition to one short answer question.

The researchers study utilized a multiple-probe design across participants. The first phase of the design was baseline. During the baseline phase, participants read the passage and answered the five questions within ten minutes. Feedback was not provided given during this time. Once a participant reached a stable baseline of at least three data probes of 40% accuracy or less, the training phase began. During the training phase the student received one-to-one instruction on the story elements and began using the story map. The researcher explained the five elements of the story map, modeled how to complete the story map, and modeled how to answer the comprehension questions for that passage. Then, the researcher and the student engaged in guided practice. After three days of instruction the student began the intervention phase. During the intervention phase he was again directed to read a short passage and answer comprehension questions, but now also had to complete the story map as an aid while reading. Students had to reach 80% accuracy on the comprehension questions for three consecutive sessions. Finally, the researchers conducted the final phase. During this phase, the previous procedures continued to be followed. Participants independently read the selected passage,

completed a story map, and answered the comprehension questions. Researchers then collected the three maintenance probes, and used previous grading procedures.

As expected, participants performed at low levels on the comprehension questions during the baseline phase, but after receiving one-on-one training on the story elements, their percentage of comprehension questions answered correctly immediately increased. Not only was there an increase in their reading comprehension scores from baseline to intervention, but those improvements were also maintained after a two-week break. Using the story map as a way of organizing the information presented in the passages, participants were then able to use them to answer the five comprehension questions for each passage. The researchers determined that a relationship could be observed between correct identification of story elements and percent correct on the comprehension questions. Further, the students have effectively demonstrated that story map instruction can increase comprehension skills in elementary through high school students.

Providing students with exposure to expository text through text structure instruction is critical. Further, the use of graphic organizers allows children to organize the text within a specific structure, thus aiding in their overall comprehension (Stagliano & Boon, 2009). As students engage in reading expository text, the processes involved in making sense of the text should be considered. While each study has unique procedures, they still produced similar findings. Therefore, teachers need to understand the text structure and how to effectively teach it to students. In addition, teachers also need to understand the importance for reading and learning from the text. The following section explores the value of expository text in supporting students' reading comprehension within the content areas.

## **Content Area Literacy**

If teachers are to assist students in meeting the literacy demands of the 21<sup>st</sup> century, it is essential that the curriculum reinvent itself so that content area literacy has a place of greater prominence (Cervetti, Bravo, Hiebert, Pearson, & Jaynes, 2009). Early exposure to exposition can lay the foundation for student understanding of the expository text that dominates in later grades . By sixth grade, more than 75% of students' reading demands in school are with expository text (Duke & Bennett-Armistead, 2003). Therefore, students in all grade levels need to be reading expository text within the content areas, as well as being taught strategies to comprehend the material. The challenge lies in how teachers are to successfully incorporate expository text reading into the content areas. This section discusses the challenges of content area literacy instruction. The first study investigates the question of which genre of text is most supportive of learning science, the use of fictional text or the use of nonfiction text. The next study explores the resistant of content area teachers in implementing reading strategies to help students understand the text. The third article examines the effects of a textbook study-reading approach. Finally, the last study compares the effects of comprehension-fostering strategies on science and social studies texts with students with learning disabilities.

The finding that students across grade levels struggled with reading and understanding nonfiction text has prompted attention to increasing students' access to content-rich text in the primary grades (Duke & Bennett-Armistead, 2003). Cervetti, Bravo, Hiebert, Pearson, and Jaynes (2009) conducted a study regarding the effects of genre on students' reading of science text. Based on recent research conducted in this area, the researchers believed that including text as part of science instruction has a positive effect on science learning (Guthrie, Wigfield, & Von Secker, 2009). However, the question of what kinds of science text should be used is unsettled.



The researchers collected their data through an oral reading of expository passages calculating miscues and amount of reading time, an oral retelling given by students, as well as answers to nine comprehension questions.

Seventy-four students participated in this study. Of this group of 74 students, 45 were girls and 29 were boys. Students were from the following ethnic groups: Hispanic American, 27; Asian American, 16; African American, 10; and European American, 14, with no information for seven students.

The texts developed for this study were based on two distinct science topics; the life cycle of a snail and the formation of sand as rocks and debris that travel from mountain to ocean. For each topic, a fictional narrative and informational form of text was developed. Though the fictional narrative and informational texts had different text structures, the two genres for a topic were constructed to include the same essential scientific information. For each topic, a core set of concepts was identified. For the snail topic, there were 14 key ideas, and for the sand topic, 10 key ideas. These key ideas appeared in each of the texts. Each pair of texts had exactly the same font and graphics.

Students were randomly assigned to one of eight groups formed by the counterbalancing of text type (snail informational and sand fictional narrative or snail fictional narrative and sand informational), topic order (sand-snail or snail-sand), and oral reading segment (first 100 words read orally or last 100 words read orally). Interviewers audiotaped students' oral reading and recorded students' miscues and the amount of reading time for the read-aloud portion of the task. When students finished reading the entire text, they were asked to provide a retelling. Next, the experimenter posed nine comprehension questions for the text. Students' retellings and responses

to comprehension questions were audiotaped and transcribed. Following the reading of both texts, students were asked to choose which of the two text types (informational, fictional narrative) they preferred and to explain the reason for their preference.

The first set of analyses aimed to rule out the effects of the counterbalancing factors: the position of the oral reading segment (first or last segment of the text) and the order of text genre (fictional narrative or informational). On the factor of oral reading order, words correct per minute did not differ significantly across the two positions; first versus last 100 words. With regard to genre order, groups one through four read snail informational and sand fictional narrative and groups five through eight read snail fictional narrative and sand informational. Neither words correct per minute nor overall comprehension differed significantly for any text whether it was presented first or second.

Students' retellings were examined for the number of key ideas students recalled from the text. Researchers studied the main effect for the topic (snail versus sand) and the simple effects of genre (fictional narrative versus informational) within each topic. There were 14 key concepts in snail texts and 10 in sand texts. The oral retelling analysis revealed no main effect for topic. However, there was a simple effect for genre in the sand topic, with the informational version eliciting nearly as many recall points as the fictional version. By contrast, the effect of the genre within the snail topic was not statistically relevant. Further, students' retellings were also analyzed for the number of misconceptions students included in their oral retellings of the text. The misconception analysis revealed an overall effect for topic, indicating that the sand topic yielded significantly more misconceptions than the snail topic. Within the snails topic, the students who read the narrative passage included more than twice as many misconceptions as those who read the informational passage. For sand, the students who read the narrative passage

also included more than twice as many misconceptions as those who read the informational passage.

Data gathered from students' responses to nine common comprehension questions were also tested by examining the effect of the topic and the simple effect of genre within each topic. The overall effect for topic was statistically significant, with the snail topic yielding greater comprehension scores than the sand topic. The effect of the genre for the topic of sand proved to be statistically significant, with the informational version producing much higher scores in comparison to the fictional narrative. The difference between the informational version and the fictional version of the snail topic was not statistically significant. The data suggested that for the snail topic, which was considerably easier to comprehend, genre did not yield a statistically significant difference, whereas for the more difficult sand topic, the informational genre yielded increased comprehension for key science information.

When the researchers compared students' comprehension, recall of key ideas, and scientific misconceptions, the results pointed to limitations for conceptual learning from fictional narratives. The recall of key science concepts was more prevalent in the informational versions of the passages, significantly so for the topic of snails. Even more problematic was the potential for fictional narratives to promote conceptual misunderstandings. However, when students were asked which type of text they preferred, there was no preference for one type of text over another. The results of this study suggest that educators should examine assumptions about the role of fictional narrative in content area instruction. Although more research needs to be conducted on the effect of genre in the science content, the researchers continue to recommend educators using texts to support students' comprehension of science content.

The Cervetti et al. (2009) study explored the question of which text is more supportive of learning science content, fictional narrative or informational. In addition to using effective texts to increase students' understanding of science content, students need to be taught reading strategies in order to comprehend these texts. The following study by McCoss-Yergian and Krepps (2010) explored the perspectives of content area teachers in relation to the implementation of reading strategies in their classrooms.

Researchers have noted that content area teachers have resisted integrating literacy in the content areas and have not believed literacy instruction was relevant to their disciplinary content (Benson, 2002). However, explicit instruction of literacy strategies in content area classroom works. In fact, according to McCoss-Yergian and Krepps (2010), it is the most effective means of improving student comprehension across the curriculum. Despite this evidence, schools are still facing an increasing literacy crisis. McCoss-Yergian and Krepps (2010) conducted a study to identify beliefs about content area literacy commonly held by teachers and to evaluate whether or not collective professional beliefs affect disciplinary instructors' implementation of content area reading strategies in their classrooms.

A combination of evaluation tools was used to collect data for this study. Researchers established objectives and then formulated interview questions to measure participants' opinions and practices in each objective area. In addition, data was collected from A Scale to Measure Attitudes toward Teaching Reading in Content Classrooms (Vaughn, 1977), to measure study participants' attitudes about teaching reading in content area classrooms.

This study occurred in a rural school district that has received recognition from the state for distinction in performance the past eight consecutive years. Thirty-nine teachers from the

middle and high schools, 13 males and 26 females, from the faculty of the middle and high schools in this school district participated in the study. In addition, only middle and high school content area teachers who did not teach reading, language arts, English or literature courses participated.

Results from Vaughan's scale and replies to items on the individual interview indicated that the research participants believe teaching reading strategies reduced instructional time. The findings were analyzed using a simple percentage equation. Forty-six percent of respondents indicated that they strongly agree that teaching reading strategies squandered instructional time. When teachers in the study sample were only presented with the choice to agree or disagree with the idea that teaching reading techniques in their classroom was a misuse of their instructional time, nearly three-quarters (74%) stated that they agreed with the statement. According to the findings, the vast majority of middle and high school teachers in this study believed that limited teaching time provided cause for judging instruction of reading strategies as wasteful. The results were consistent with Park and Osborne's (2006) research that suggested that teachers feel that reading instruction infringes on content area time. According to Ness (2007), secondary teachers frequently explain their lack of explicit strategy instruction by citing time shortages. The results of McCoss-Yergian and Krepps (2010) study demonstrated that the secondary teachers who participated believe that coverage of content material would be compromised if they implemented reading strategy instruction in their classroom.

This study also discovered the amount of daily instructional time participants reported dedicating to reading strategy instruction. The data revealed that 67% of teachers contributing to the study spent no time providing reading strategy instruction in a typical lesson in their content area classroom. Additionally, one-fourth of respondents indicated that they devoted five to ten

minutes of daily lesson time to teaching reading strategies. Another five percent of teachers participating in the study specified that they typically allowed 15 to 20 minutes of time in a lesson to teach reading strategies. Finally, three percent of the study sample estimated that they utilized 25 to 30 minutes during a lesson providing reading strategy instruction.

A review of the research revealed that content area teachers frequently referenced limited teaching time as a reason for avoiding the use of literacy strategies. For instance, Cantrell's (2009) findings indicated that pressures to teach subject area content as efficiently as possible may impeded teachers' willingness to abandon traditional pedagogical methods. Cantrell also suggested that content area teachers deem helping students read more effectively is not their responsibility. Additionally, Parris and Block (2007) reported that a major challenge for teachers of underachieving students was simply finding the time to deliberately teach literacy competencies.

The researchers believe that the information collected from this study is important to school districts and the children they serve. The data revealed that the attitudes a content area teacher subscribed to about literacy instruction in the classroom predicts the probability that he or she implements content area reading strategies into course design and instructional practices. In order to begin transforming the attitudes of middle and high school teachers and to prepare students for the literacy demands of the future, undergraduate and graduate education programs must develop, embed, and require a significant content area reading strategy training component. In addition, undergraduate, graduate and continuing education programs must create instructional paradigms that teach that comprehension must be equal to content in core and elective disciplinary classrooms. Further, middle and high school teachers must be required and

encouraged to utilize content area reading strategy instruction to improve student comprehension in their classrooms.

Similar to the research conducted by McCoss-Yergian and Krepps (2010), Pressley (2002) has reviewed studies that reported that few teachers use reading strategies in their instruction, despite the evidence of the effectiveness of reading strategies on students' comprehension. In order to change their instructional routines, teachers likely needed additional support. Radcliff, Caverly, Peterson, and Emmons (2004) wanted to research an effective way for teachers to use reading strategies in the science classroom.

Radcliff et al. (2004) conducted a study that examined the effects of introducing the PLAN study-reading strategy into two middle school science classrooms taught by one of the authors of this study, Caverly, a middle-school science teacher. Researchers noted that student created maps, the central focus of PLAN study- reading strategy, improves upon other strategic approaches to textbook reading. Further, the value of student construction of concept maps has been well documented for the science classroom. Participants were the science teacher from a small, rural middle school and the fifteen seventh-grade and eighteen eighth-grade students in his two science classes.

Three assessments were administered before and after the four weeks of PLAN instruction by the teacher. The first assessment was a reading comprehension test that assessed students' comprehension of the textbook chapters. Second, students created concept maps based upon the science chapters that they were reading. The pretest and posttest assessments provided a second measure of reading comprehension. Last, the researchers developed a checklist including

ten true-false questions asking students about the strategies they used for reading a textbook chapter and for monitoring comprehension.

After participating in several trainings regarding the processes of strategic textbook reading being implemented into a middle school classroom, the teacher began the study. The PLAN strategy was implemented in his seventh- and eighth-grade science classes. The PLAN was introduced as a new means for students to “read hard material in the science textbook.” The teacher illustrated how to create concept maps on the board. Then, the students created concept maps in groups and then individually. Finally, the students individually completed the four steps in the PLAN strategy based on content in their science textbook. In the first step of the process, students predicted (P) the content of the text and constructing a tentative map. Second, students located (L) on the map what was known by placing checkmarks and what was not known by placing question marks. Third, students added (A) notes during the reading of the textbook to confirm checkmarks and to address the question marks. Finally, students noted (N) a re-formulated understanding by revising the map, writing a summary, or performing any other task that might be aligned with the purposes for reading.

After the study, the researchers conducted interviews with both the teacher and students to reveal their perspectives on the effectiveness of PLAN. The teacher observed improvement in his students’ learning. His students moved from needing group support with strategic reading to being independent in their strategy use and able to do the reading as homework. The teacher also noted that the publisher-provided chapter tests were inadequate measures of student learning. By discussing with his students what they learned, he felt they learned more than what they demonstrated on the tests. Similarly, the students reported an increase in their reading since the implementation of the PLAN strategy. They elaborated, sharing that they understood more of



that they read and that they used elements of the PLAN strategy. Students were no longer hesitant to use the textbook. Consistent with the teacher's descriptions, the students interviewed reported that they were doing well in science, improving their grades.

The differences in students' scores on the comprehension pretest and posttest were not statistically significant. This result was unexpected and inconsistent with other findings in this qualitative study. However, the concept maps revealed that students were able to accurately represent the major headings and subheadings of the chapter. The percentage of propositions that reflected paraphrasing of content and higher order thinking increased from 9% to 14%. Further, there was a decline in the percentage of propositions that were copied from the text (91% to 86%).

This study reported the subsequent gains in students' willingness and ability to learn from textbook reading. Textbook reading in this middle school science classroom changed from being an assignment that students were expected to complete to one in which students completed and learned science content. This teacher developed his ability to teach students effective study-reading strategies from simply being aware of the need to teach them, to understanding how to teach them, to the control of teaching them, and his willingness to adapt them to fit his needs.

The importance of teachers understanding the role of reading strategies in the content areas is crucial for students' success in expository text comprehension. In addition, students need to have a sound understanding of these strategies and the knowledge to apply these strategies to their independent content area reading (Cervetti, et al., 2009). Students' difficulty with reading in the upper elementary and middle school grades is often attributed to poor reading comprehension and the inability to apply reading strategies to expository text. Minimal research has been

conducted regarding the struggles of poor middle school readers in the content areas, specifically students with learning disabilities.

In this next study, Baaken, Mastropieri, and Scruggs (1997) compared the effects of comprehension-fostering strategies on science and social studies texts with 54 eight-grade students with learning disabilities in order to determine the appropriate instruction struggling readers need. The study was designed to assess the possibility of teaching adolescents with a learning disability to identify three types of text structures (main idea, list, and order) and to apply structure-specific strategies for assisting expository text comprehension. Also included, were two alternative strategies- paragraph restatement training, and a traditional instruction training condition. Thus, the independent variable was text structure instruction: text-structure based training vs. paragraph restatement training vs. traditional instruction training.

Fifty-four eighth-grade students classified as LD participated in the study. Of the 54 participants, 34 were male; 38 were Caucasian; 13 were African American; 3 were Hispanic. Students were randomly assigned to one of the three conditions listed above. The dependent variable measured students' knowledge regarding general strategies for reading through the use of pre- and post-instruction surveys. Questions were developed to measure students' knowledge about the general reading information and strategies incorporated into the comprehension of expository science and social studies material prior to and after instruction. In addition, the following materials were used across conditions: implementation scripts; instructional passages; student booklets; and testing passages for immediate, delayed, and transfer comprehension measures.

A trained investigator observed students individually for 3 days of instruction, followed by a fourth day of immediate testing and a fifth day of delayed testing and transfer testing. Time across instructional conditions was equivalent, with all students receiving 94 minutes of instruction over three sessions. The following procedure was used for all instructional conditions. On the first day, the pre-instruction strategy survey was administered, followed by explanations on why the condition-specific strategy was important. Then, student booklets were distributed, followed by condition-specific strategy instruction. The text-structure based strategy included explicit instruction on key words and clues for identifying main idea, list, and order passages. The paragraph restatement strategy instruction taught students to read each passage, and then write short statements about the passage in their own words. Students studied their statements to remember what the passage was about. The traditional strategy instruction involved students reading the passages and then answering specific questions about the content of the passage. On the second and third day, student booklets were distributed, previous instruction was reviewed, and condition-specific strategies were taught. On the fourth day, the immediate test was administered using the text booklets containing science passages. Prior to reading and listening to the passage, students were reminded to use the strategy instruction they had learned. Following reading, the students studied the passage for four minutes, and then booklets were removed for a retelling. This procedure was done for all three passages. Following the recall of the last passage, students were asked to identify the three types of passages; main idea, list, and order. On the fifth day, a surprise delayed science recall test and the transfer test was administered. For the delayed test, students were provided a keyword for prompting and were directed to recall everything they could in terms of the passages they read the previous day. This test was implemented to determine if students could remember previously read science

information without previous warning they would be asked. Following the delayed recall test, the transfer test was administered. The procedure for the transfer test paralleled that of the immediate test, except the passages covered social studies content. Finally, the post-instruction strategy measure was administered.

Results indicated that text-structure based reading strategies had a significant effect on (a) recall of central and incidental information over traditional instruction on immediate, delayed, and transfer tests; and (b) recall of central, but not incidental information over the paragraph restatement strategy on all measures. Moreover, the paragraph restatement condition statistically outperformed the traditional instruction condition on all measures. Regardless of instructional condition, all students reported that the strategies were beneficial and that others should learn these strategies. Findings indicate that eighth-grade students with learning disabilities can learn, apply, and transfer complex text-structure-based strategies.

Achieving success in subject areas ranging from social studies to science requires that students be able to comprehend the texts of such subjects. The genre of text, attitude and knowledge of teachers, and strategies used to teach are all critical factors when considering how students' best comprehend science and social studies curriculum. Recent articles in reading and science education journals have urged that teachers use text to teach science and social studies (Cervetti et al., 2009). Unfortunately, if left to their own devices many students struggle to read and learn from these texts. Despite research documenting its effectiveness, instruction in how to comprehend content texts is not featured in many classrooms (Neufeld, 2005). Therefore, teachers need to understand how to effectively teach their students the necessary skills and strategies used when reading text in the content areas. Further, students are successful and

comprehension does improve when an emphasis is place on expository text strategy instruction (Cervetti et al., 2009; McCoss-Yergian & Krepps, 2010).

## **Conclusion**

Reading comprehension involves actively constructing new understandings by building relationships among the parts of text and between the text and one's pre-existing knowledge (Neufeld, 2005). Proficient readers build coherent mental representations of what they read by understanding different text structures, generating inferences, monitoring their understanding, and using multiple strategies to construct meaning (Lee, 2004). The use of text structure to understand how the important ideas of an expository text are inter-related increases readers' meaning making (Hall et al., 2005; Williams et al., 2005). Readers who use text structure can mentally examine how ideas in text are interrelated through the use of such relationships as sequence, comparison, causation, or problem and solution. Readers also may use external aids such as graphic organizers and matrices. It can be an effective instructional tool to enhance comprehension performance (Lee, 2004). In addition, the ability to comprehend expository text is critical for students' success in the content areas. Research indicates that expository texts in the content areas aids in students comprehension (Cervetti, 2009; McCoss-Yergian & Krepps, 2010). However, students need to be explicitly taught text structure and reading strategies in order to comprehend these texts. Without proper attention to expository text in the early grades, students remain unprepared for the comprehension demands that await (Caldwell & Leslie, 2010). The uses of expository text in classrooms and in the content areas, as well as explicit text structure instruction, are effective in supporting students' developing comprehension of expository text. The following chapter describes the methodology used to carry out the intervention shaped by the theories and research described in this chapter.

### **CHAPTER THREE: METHODOLOGY**

The purpose of this study was to determine the effect of text structure instruction, specifically compare/contrast and cause/effect, on struggling third grade readers' comprehension of expository text within the science curriculum. One of the most efficient strategies for which there is an influx of research and practice is training students on text structure knowledge to facilitate their comprehension of expository text (Block & Duffy, 2008). Research states that students who understand the idea of text structure and how to analyze it are likely to learn more than students who lack this understanding (RAND Reading Study Group, 2002). In addition, because students across grade levels struggle with reading and understanding expository text, attention to increasing students' access to content-rich text in the primary grades has increased. Including texts as part of science instruction has positive effects on students' science learning (Cervetti, Bravo, Hiebert, Pearson, & Jaynes, 2009). This chapter will describe the action research participants, the procedure used for intervention, and the data collected throughout the intervention process.

#### **Participants**

The participants in this study were students from three different third grade classrooms at the researcher's school. The students attended a public elementary school in southeastern Wisconsin. The school the students attended served approximately 320 students kindergarten through fourth grade. Of the 10 students who participated in the intervention, three were males and seven were females. Nine of the students were Caucasian and one was Asian which was representative of the school's demographics as 90% of students are Caucasian. The students were selected for this research study because all students exhibited comprehension struggles in their classrooms especially within the science content area. Half of the group received Leveled

Literacy Intervention (Fountas & Pinnell, 2009) from the school's reading specialist for 30 minutes, five days a week. Leveled Literacy Intervention (LLI) is a small-group, supplementary intervention system designed to help teachers provide powerful, daily, small-group instruction for the lowest achieving students. Therefore, this group of students seemed suitable for explicit, expository text structure instruction.

Prior to the intervention, the students read both a compare and contrast (crocodile and alligator) science passage and a cause and effect (sea turtle) science passage. The texts were related to the science curriculum and were administered at the beginning and end of the study (see Appendices A and B for passages). Students completed a text structure graphic organizer (see Appendices C and D for graphic organizers) and completed a written paragraph about the passage (see Appendices E and F for text frame paragraphs and Appendices G for rubric). In addition, students also provided a verbal retelling of the passage after the above were completed. For each passage, there were 10 key ideas identified (see Appendix H and I). Students' retellings were scored from a 0 to 10 based on the number of key ideas recalled. Further, students answered science content comprehension questions related to the text without any look backs (see Appendix J and K).

Students were also administered the Qualitative Reading Inventory- 5 (QRI-V) (Caldwell & Leslie, 2010). The QRI-5 is an informal reading assessment, designed to assess a child's ability to read aloud, retell, and comprehend text. The expository passage administered to the students from the QRI-5 was at a second grade reading level (see Appendix L). Students answered concept questions before reading the passage to determine students' familiarity with the second grade expository passage. Next, students predicted what they believed the text would

be about. Then, students read the passage aloud. Finally, students individually gave a verbal retelling of the passage and answered implicit and explicit comprehension questions.

## **Procedure**

The goal of the intervention was to teach students how to identify compare and contrast and cause and effect text structures, as well as to see if knowledge of text structure improves students' comprehension of expository text. The six week study was separated into two three week sections. Within the first section, students received explicit text structure instruction on compare and contrast. The second three weeks focused on cause and effect text structure instruction. For each text structure unit, it was expected that students would understand that text has a structure and be able to identify a specific text structure. Therefore, the first lesson included an introduction of text structure through a text structure read aloud to discuss the structure as a whole group. During the following two lessons, the researcher used the same read aloud to learn, identify, and highlight text structure specific signal words within the read aloud passage. In addition, students learned how to complete graphic organizers associated with the text structure as a whole group (see Appendix C and D). The researcher modeled how to use information from a graphic organizer to write a text frame paragraph. Students then completed a text frame paragraph. Students also answered five comprehension questions related to the passage, without being able to look back at the text. Finally, students independently reread the passage and individually gave a verbal retelling of the expository passage to the researcher. Prior to the intervention, 10 key ideas were identified from each passage. Students' retellings were scored based on the number of those 10 key ideas identified.



The subsequent eight lessons in the compare and contrast text structure section consisted of four main sections: (a) activation of passage background knowledge and reviewing the text structure with students, (b) reading the text and highlighting of text structure signal words, (c) completion of the text structure graphic organizer, completion of text frame paragraph, and answering of comprehension questions and (d) rereading of text and verbal retelling. Within the eight lessons, four compare and contrast passages were used. Therefore, the four main sections were divided into two lessons for each passage.

The four compare and contrast expository text passages that were selected were at a second grade reading level. Due to the students' struggles with reading comprehension, the researcher selected texts that would be appropriate for the students. Before reading each of the compare and contrast texts, the researcher introduced the students to the content of the passage, and students shared their background knowledge. Then, the students reviewed the compare and contrast text structure. Anchor charts were displayed in the classroom with a description of the compare and contrast text structure, the signal words, as well as a visual model of the graphic organizer. During the next section of the lesson, students read the text and highlighted text structure signal words. The text was either read independently, as a small group, or as a whole group. Students could reference the signal words posted on the anchor chart while highlighting. Following the reading of the text, students used information from the text to complete a compare and contrast graphic organizer. Using their graphic organizers, the students completed a compare and contrast text frame paragraph. Within this section of the lesson, students answered comprehension questions relating to the passage. They completed this independently and without being able to look back into the text for assistance. The final section of the lesson consisted of

students independently rereading the passage a final time. After reading, students individually gave the researcher a verbal retelling of the passage.

Similar to the compare and contrast text structure procedures, introductory and modeling lessons and the succeeding eight lessons, were the cause and effect text structure procedures. The eight lessons in the cause and effect text structure section also consisted of four main sections: (a) activation of passage background knowledge and reviewing the text structure with students, (b) reading the text and highlighting of text structure signal words, (c) completion of the text structure graphic organizer, completion of text frame paragraph, and answering of comprehension questions and (d) rereading of text and verbal retelling. Within the eight lessons, four cause and effect passages were used. Therefore, the four main sections were divided into two lessons for each passage. Similar to the reading level of the compare and contrast passages, the researcher selected cause and effect passages that were appropriate for the selected participants.

### **Data Collection**

The first point of data collection in this study was a pretest of students' understanding of compare and contrast and cause and effect text structures. This assessment investigated the effect text structure understanding may have on students' comprehension of the science content within the passage. After reading the passage, students completed a text structure graphic organizer and text frame paragraph, answered science content questions in relation to each passage, as well as gave a verbal retelling of the passage. The second point of data collection in this study was a pretest of students' retelling and comprehension of expository text using the QRI-5 (Caldwell & Leslie, 2010) assessment. The QRI-5 is an informal reading assessment, designed to assess a

child's ability to read aloud, retell, and comprehend text. Students read the passage aloud, gave a verbal retelling, and answered both implicit and explicit comprehension questions regarding the passage. At the culmination of the six week study students once again were administered the text structure passages and the QRI-5 assessment to demonstrate growth.

### **Summary**

Research in the areas of expository text structure and content area literacy indicated that there is a connection and need for text structure interventions to be implemented (Cervetti et al., 2009). Based on research in the areas of text structure and content area literacy, this six week study conducted using science content passages was designed to look closely at how and if text structure instruction and awareness affects students' reading comprehension of expository text. Ten students were used to analyze the connections between text structure and comprehension. The results of the procedures described above and the data collection are discussed in the next chapter.

## CHAPTER FOUR: RESULTS

This research study consisted of the implementation of a six-week text structure intervention. Prior to the intervention, students were administered a compare and contrast text structure passage, as well as a cause and effect text structure passage to assess students' understanding of text structure and the effect on science content comprehension. In addition, students were administered the QRI-5 (Caldwell & Leslie, 2010) to assess students' retelling and comprehension of an expository text passage. The six-week study was separated into two three-week sections. The first three-week section consisted of compare and contrast text structure instruction, while the second section focused on cause and effect text structure instruction. Each three-week section followed the same procedures. The first three lessons included an introduction to the specific text structure, the researcher modeling how to identify signal words, completion of a graphic organizer, and completion of a text frame paragraph. The succeeding eight lessons in each text structure section consisted of four main sections: (a) activation of passage background knowledge and reviewing the text structure with students, (b) reading the text and highlighting of text structure signal words, (c) completion of the text structure graphic organizer, completion of text frame paragraph, and answering of comprehension questions and (d) rereading of text and verbal retelling. Within the eight lessons, four text structure passages were used. Therefore, the four main sections were divided into two lessons for each passage. After the intervention was completed, the researcher assessed all students again using the same measures as the pretest. The results of the measures are presented in the next section of the chapter.

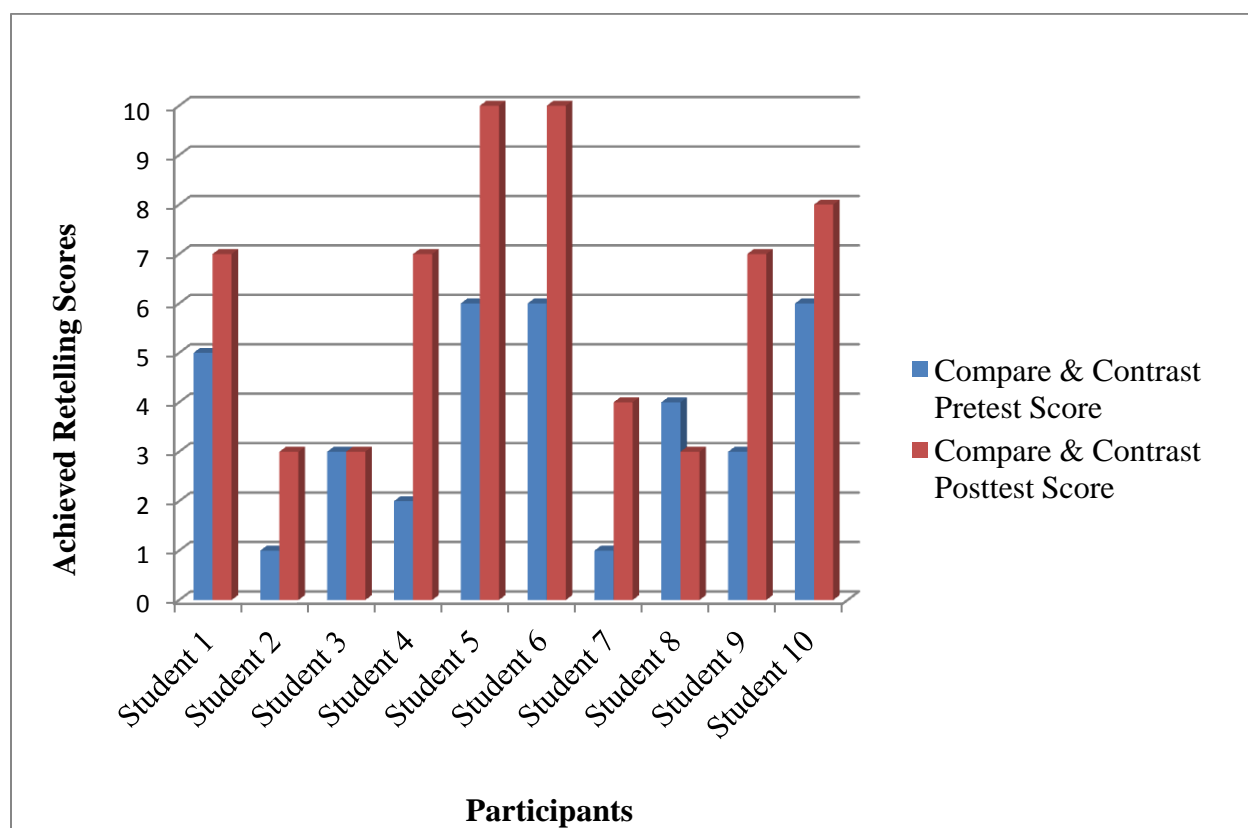
## Data Analysis

The first item that was completed in this study was to assess each student individually using the cause and effect and the compare and contrast science passages. The texts were related to the science curriculum and were administered at the beginning and conclusion of the study. The compare and contrast passage was titled *Crocodiles and Alligators* (Weekly Reader, 2006) and the cause and effect passage was *Sea Turtles* (Weekly Reader, 2008). Both texts were utilized within the third grade science curriculum (Foresman, 2006). The researcher's hypothesis was that students' understanding of expository text structure, specifically compare and contrast and cause and effect, would improve students' ability to provide a verbal retelling of the passage, as well as improve their ability to answer content related questions.

The compare and contrast, as well as the cause and effect assessments were administered as a pretest and a posttest. For this assessment, the students independently read the text, completed the text appropriate graphic organizer, wrote a text frame paragraph, provided a verbal retelling, and answered comprehension questions. For both text structure passages, 10 key ideas were identified (see Appendix H and I). Students' retellings were scored from a 0 to 10 based on the number of key ideas recalled. In addition, students answered 10 comprehension questions, without look backs, in relation to each passage. Students' scores on the retelling and comprehension questions were scored and the results are discussed.

The pre-assessment results for the compare and contrast passage retellings indicated that Student One recalled five key ideas and Student Two recalled only one key idea. Student Three remembered three key ideas and Student Four recalled two key ideas. Students Five and Six both recalled six key ideas. Student Seven recalled one key idea and Student Eight remembered

four key ideas. Further, Student Nine recalled three key ideas and Student Ten recalled six key ideas. The mean of the pretest was 3.7 (see Figure 1).



*Figure 1.* Pretest and posttest results for compare and contrast retelling

According to the third grade expectations for recalling main ideas from an expository text, these pretest results were considered low. The Common Core English Language Arts Standards for Informational Text (2010) stated that students should be able to determine the main idea of a text, recount the key details, and explain how they support the main idea. It is essential that students recount the majority of key ideas in order to develop a sound understanding of the text (Cervetti et al., 2009).

The posttest results for the compare and contrast retellings suggested that after the intervention Students One and Two increased their posttest retellings by two key ideas. Student One recalled a total of seven key ideas, while Student Two only recalled a total of three key ideas. Student Three showed no growth, for a total recall of three key ideas. Student Four retold five additional key ideas, for a total recall of seven key ideas. Students Five and Six retold four additional key ideas, both recalling a total of ten key ideas. Student Seven increased her retelling by three key ideas, for a total recall of four key ideas, while Student Eight told one less key idea, totaling three key ideas. Student Nine retold four more key ideas, increasing her retelling to seven key ideas, and Student Ten retold two more ideas, increasing her retelling to eight key ideas. The mean of the posttest was 6.2. Therefore, the mean increased from pretest to posttest by 2.5 (see Figure 1).

A one-tail dependent  $t$ -test was used to test the researcher's hypothesis that students' retelling would improve on the posttest compare and contrast passage, compared with their pretest scores. There was a significant difference in the scores for pretest ( $M=3.7$ ,  $SD= 2.0$ ) and the posttest ( $M=6.2$ ,  $SD=2.8$ );  $t(9) = .0012$ ,  $p = .05$ . These results suggest that the intervention was successful in improving students' ability to retell a compare and contrast expository passage. Specifically, the results suggested that compare and contrast text structure instruction improved students' retelling of key ideas of expository text.

After students provided a verbal retelling of the compare and contrast passage *Crocodile and Alligator*, students answered 10 comprehension questions without look backs. The pre-assessment results for the comprehension questions indicated that Student One scored a 30%, answering three comprehension questions correctly. Student Two scored a 20%, answering two questions correctly, and Student Three scored a 60%, answering six comprehension questions

correctly. Students Four, Five, and Six attained a 50% and accurately answered five of the comprehension questions. Student Seven scored a 60%, answering six of the questions correctly, Students Eight and Nine scored a 40%, answering four of the questions correctly, and Student Ten attained a 30%, answering three questions accurately. The pretest mean was 4.3 or 43% (see Figure 2). Similar to the results for the retelling of this passage, the pretest results were low. After reading a third grade passage, a proficient readers' comprehension reflects at least 75% accuracy according to the third grade expectations at the researcher's school.

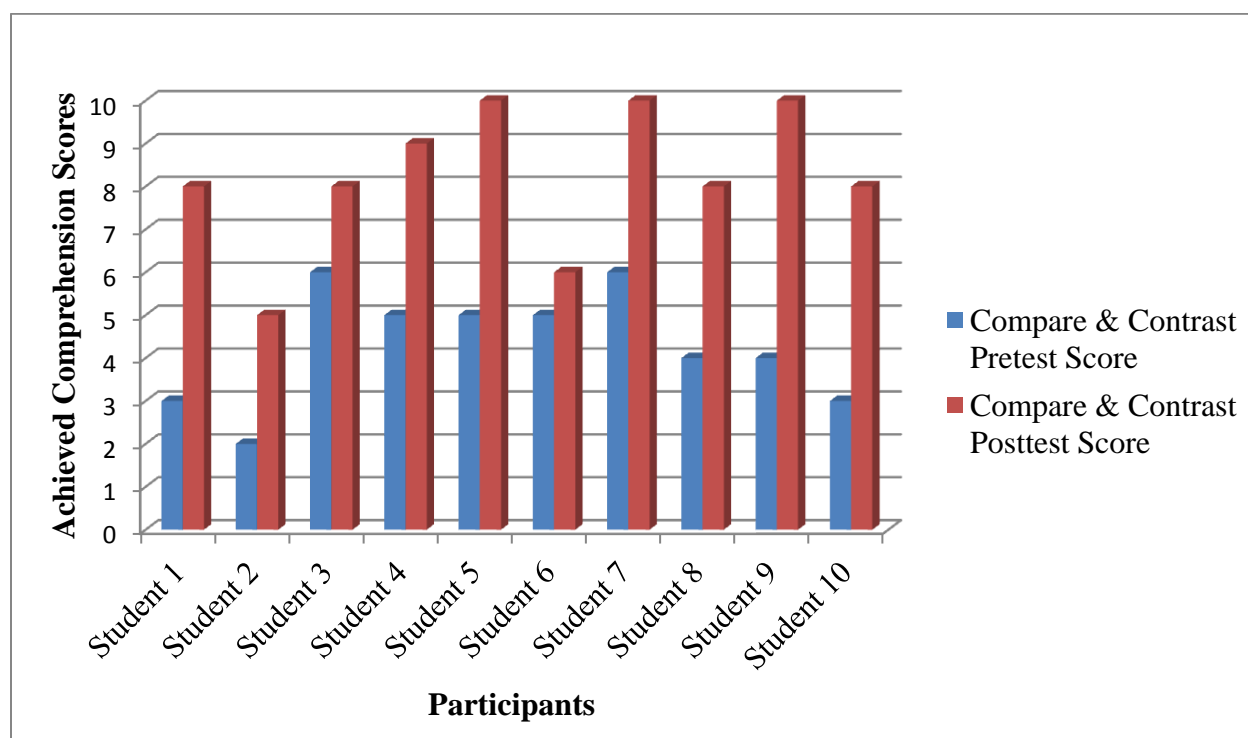


Figure 2. Pre-test and Post-test results for compare and contrast comprehension questions.

The posttest comprehension results for the compare and contrast passage suggested that after the intervention, all students improved their comprehension scores. Student One increased his score by answering five more questions correctly, receiving an 80%. Student Two answered three more questions correctly obtaining a 50% and Student Three answered two more questions



correctly to increase her score to an 80%. Student Four increased her score by accurately answering four more questions and earning a 90%. Student Five doubled her comprehension score and earned a 100%. Student Six answered one additional question correctly receiving a 60% and Student Seven answered four more questions correctly increasing her score to a 100%. Student Eight increased his score by answering four additional questions correctly and obtained an 80%. Student Nine increased her score by answering six more comprehension questions correctly, earning a 100%. Finally, Student Ten increased her score by answering five additional questions correctly, receiving an 80%. The posttest mean was 8.2 or 82% (see Figure 2). Therefore, the difference in the pretest and posttest means was 3.9 or a 39% increase.

A one-tail dependent  $t$ -test was used to test the researcher's hypothesis that students' comprehension would improve on the posttest compare and contrast passage, compared with their pretest scores. There was a significant difference in the scores for pretest ( $M=4.3$ ,  $SD= 1.3$ ) and the posttest ( $M=8.2$ ,  $SD=1.7$ );  $t(9) = 1.008E-5$ ,  $p = .05$ . The results suggested that the intervention was successful in improving students' ability to comprehend a compare and contrast expository passage. Specifically, the results suggested that compare and contrast text structure instruction improved students' comprehension of expository text.

The second text structure assessment presented to the students was the *Sea Turtle* cause and effect passage. As stated in the Williams et al. (2007) study discussed in Chapter Two, the cause-effect structure was more difficult than the compare-contrast structure for elementary students, perhaps due to the use of higher level thinking skills. Accordingly, the results from this study suggested similar findings. The pre-assessment results for the cause and effect retellings indicated that Student One recalled three key ideas, and Student Two recalled no key ideas. Students Three and Four both recalled four key ideas. Student Five recalled seven key ideas,

while Student Six only recalled two key ideas and Student Seven one key idea. Student Eight recalled four key ideas and Student Nine recalled three key ideas. Finally, Student Ten recalled four key ideas. The mean for the pre-assessment was 3.2 (see to Figure 3).

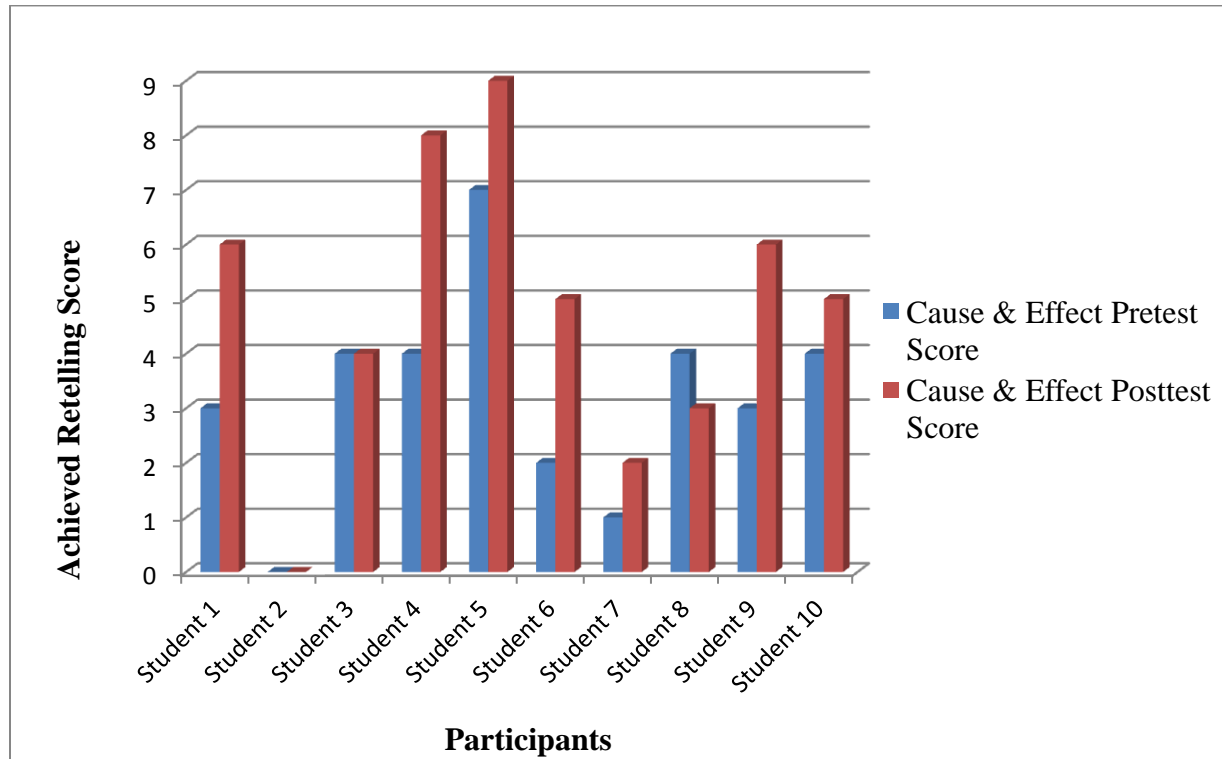


Figure 3. Pre-test and post-test results for cause and effect retelling.

Comparable to the results of the compare and contrast retelling pre-assessment, students' pre-assessment scores were considered low according to third grade expectations. The Common Core English Language Arts Standards for Informational Text (2010) stated that students should be able to determine the main idea of a text, recount the key details and explain how they support the main idea. It is essential that students recount the majority of key ideas in order to develop a sound understanding of the text (Cervetti, Bravo, Hiebert, Pearson, & Jaynes, 2009).

Unlike the posttest retelling scores for the compare and contrast passage, students' posttest retelling results for the cause and effect passage suggested slight improvement, if any. Student One increased his posttest retellings by three key ideas, recalling a total of six key ideas. Student Two remained the same recalling no key ideas. Student Three recalled four key ideas, indicating no increase. Student Four increased her retelling by four key ideas, for a total recall of eight key ideas. Student Five retold two additional key ideas, increasing her recall to nine key ideas, and Student Six retold three additional key ideas, recalling a total of five key ideas. Student Seven recalled only one additional key idea, for a total recall of two key ideas, while Student Eight decreased his retelling by one key idea for a total of three key ideas. Student Nine retold three additional key ideas, increasing her total to six key ideas. Finally, Student Ten recalled only one more key idea for a total recall of five key ideas. The mean for the posttest was 4.8. Therefore, the mean increased by 1.2 from pretest to posttest (see Figure 3).

A one-tail dependent  $t$ -test was used to test the researcher's hypothesis that students' retellings would improve on the posttest cause and effect passage, compared with their pretest scores. There was a significant difference in the scores for pretest ( $M=3.2$ ,  $SD= 1.9$ ) and the posttest ( $M=4.8$ ,  $SD=2.7$ );  $t(9)=0.0012$ ,  $p = .05$ . The results suggested that the intervention was successful in improving students' ability to retell a cause and effect expository passage. However, students' overall retelling scores of the cause and effect passage do not reflect proficiency in third grade.

After students provided a verbal retelling of the cause and effect passage, *Sea Turtle*, students answered 10 comprehension questions without look backs. The pretest results are discussed. Student One scored a 20%, answering two comprehension questions correctly. Student Two scored a 0%, answering no questions correctly, and Student Three scored a 20%,

answering two comprehension questions correctly. Student Four scored a 10%, correctly answering one comprehension question. Student Five scored a 70%, answering seven comprehension questions accurately. Student Six attained a 40% and accurately answered four of the comprehension questions. Students Seven and Eight scored a 20%, answering two of the questions correctly. Student Nine scored a 30%, answering three of the questions correctly, and Student Ten attained a 40%, answering four questions accurately. The pretest mean was 2.7 or 27% (see Figure 4).

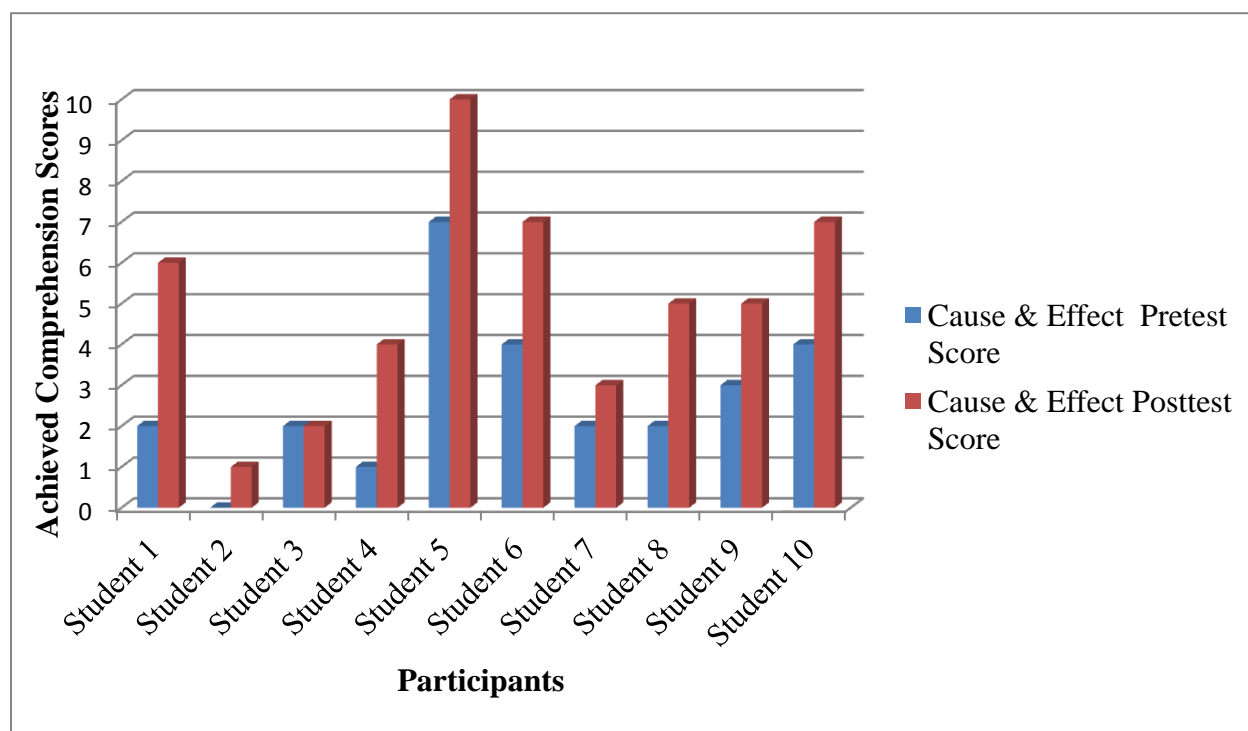


Figure 4. Pre-test and post-test results for cause and effect comprehension questions.

The posttest comprehension results for the cause and effect passage indicated that after the intervention, all students within this study, with the exception of Student Three, improved their comprehension scores. Student One increased his score by answering four more questions correctly, receiving a 60%. Student Two answered one questions correctly, obtaining a 10% and Student Three answered no additional questions correctly, maintaining a score of 30%. Student

Four increased her score by accurately answering three additional questions and earning a 40%. Student Five answered three more comprehension questions accurately, receiving a score of 100%. Student Six answered three additional questions correctly, receiving a 70% and Student Seven answered only one more question correctly increasing her score to a 30%. Student Eight increased his score by answering three additional questions correctly and obtained a 50%. Student Nine increased her score by answering two more comprehension questions correctly, earning a 50%. Finally, Student Ten increased her score by answering three additional questions correctly, receiving a 70%. The posttest mean was 5 or 50% (See Figure 4). Therefore, the difference in the pretest and posttest means was 2.3 or a 23% increase.

A one-tail dependent *t*-test was used to test the researcher's hypothesis that students' comprehension would improve on the posttest cause and effect passage, compared with their pretest scores. There was a significant difference in the scores for pretest ( $M=2.7$ ,  $SD= 1.9$ ) and the posttest ( $M=5.0$ ,  $SD=2.7$ );  $t(9)=0.0012$ ,  $p = .05$ . The results suggested that the intervention was successful in improving students' ability to comprehend a cause and effect expository passage. However, students' overall comprehension scores of the cause and effect passage do not reflect proficiency in third grade.

Overall, the text structure assessments for compare and contrast and cause and effect suggested that students did recall more key ideas and improve the number of comprehension questions answered correctly after the text structure intervention. When comparing the results of the compare and contrast and cause and effect text structures, the results indicated that students' ability to retell key ideas and answer comprehension questions while reading a compare and contrast passage were higher than the cause and effect passage.

The second item that was completed in this study was to assess each student individually using the QRI-5 assessment (Leslie & Caldwell, 2011). This was an informal reading assessment, designed to assess a child's ability to retell and comprehend text. The expository passage administered to the students from the QRI-5 was at a second grade reading level (see Appendix M). After reading aloud the passage, students provided an oral retelling. Students were directed to retell the passage as if it were being told to someone who had never read or heard it before. Scoring was determined by comparing the ideas recalled by the student with those on the retelling-scoring sheet provided with the passage. The researcher scored the retelling. A total number of 49 ideas could have been recalled from the text. A retelling percentage was determined to compare students' pre and posttest scores. This same procedure was completed during the administration of the posttest.

When examining the results of the QRI-5 pre-test for the retelling, Student One retold 24% of the total ideas, while Student Two did not retell any of the ideas. Student Three retold 42% of the total ideas. Student Four retold 16% of the total ideas, Student Five retold 37%, and Student Six retold 24%. Student Seven recalled 22% of the total ideas, Student Eight retold 21% of the total ideas, Student Nine retold only 16% of the total ideas, and Student Ten retold 32%. The mean for the QRI-V retelling was 24.4 or 24.4% (see Figure 5).

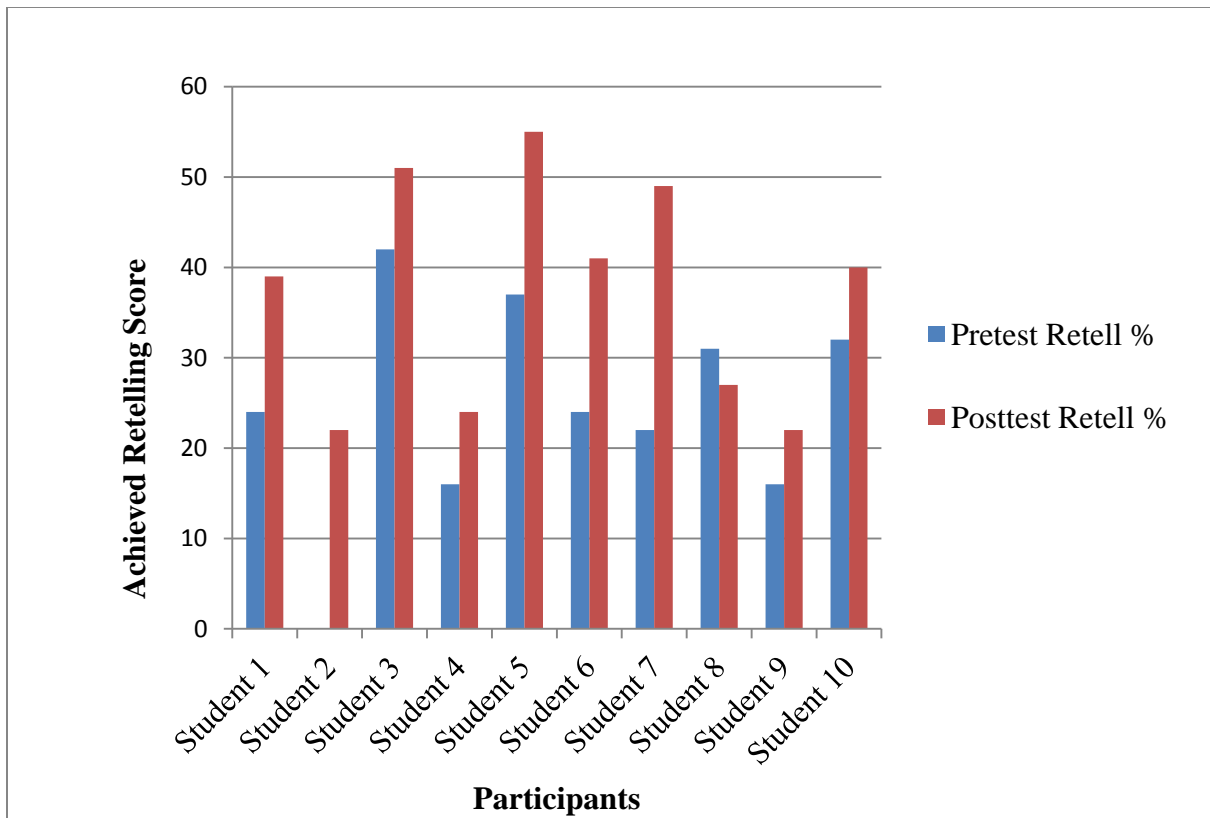


Figure 5. Pre-test and post-test results for QRI-5 retelling.

The posttest results for the retelling portion of the QRI-5 suggested that all students, with the exception of Student Eight, improved their retelling percentage. Student One retold 15 more ideas, increasing his overall percentage to 39%. Student Two retold 22 ideas, increasing his overall percentage to 22%. Student Three retold nine additional ideas for an overall retelling of 51%. Student Four retold eight more ideas, increasing her retelling percentage to 24%. Student Five retold 18 additional ideas for a total retelling of 55% and Student Six retold 17 additional ideas, increasing her overall percentage to 41%. Student Seven retold 27 additional ideas, the highest increase of all students. Her overall retelling increased to 49%. Student Eight retold four less ideas for a total retelling of 27%. Student Nine retold six additional ideas for an overall

retelling of 22%. And Student Ten increased her retelling by eight key ideas, for an overall retelling percentage of 40%. The mean for the posttest was 37 or 37% (see Figure 5).

A one-tail dependent *t*-test was used to test the researcher's hypothesis that students' retelling would improve on the QRI-5 retelling posttest, compared with their pretest scores. There was a significant difference in the scores for pretest ( $M=24.4$ ,  $SD= 12.1$ ) and the posttest ( $M=37$ ,  $SD=12.5$ );  $t(9) = .0008$ ,  $p = .05$ . The results suggested that the intervention was successful in improving students' ability to retell an expository passage. Specifically, the results suggested that text structure instruction improved students' retelling of expository text.

After students provided a verbal retelling of the QRI-5 expository passage, students answered eight comprehension questions without look backs. Student One scored a 25%, answering two comprehension questions correctly. Student Two scored a 0%, answering no questions correctly, and Student Three scored a 63%, answering five comprehension questions correctly. Student Four scored a 13%, correctly answering one comprehension question. Student Five scored a 50%, answering four comprehension questions accurately. Student Six attained a 63% and accurately answered five of the comprehension questions. Student Seven scored a 50%, answering four comprehension questions and Student Eight scored a 38%, answering three of the questions correctly. Student Nine scored a 25%, answering two of the questions correctly, and Student Ten attained a 38%, answering three questions accurately. The pretest mean was 2.9 or 29% (see Figure 6).



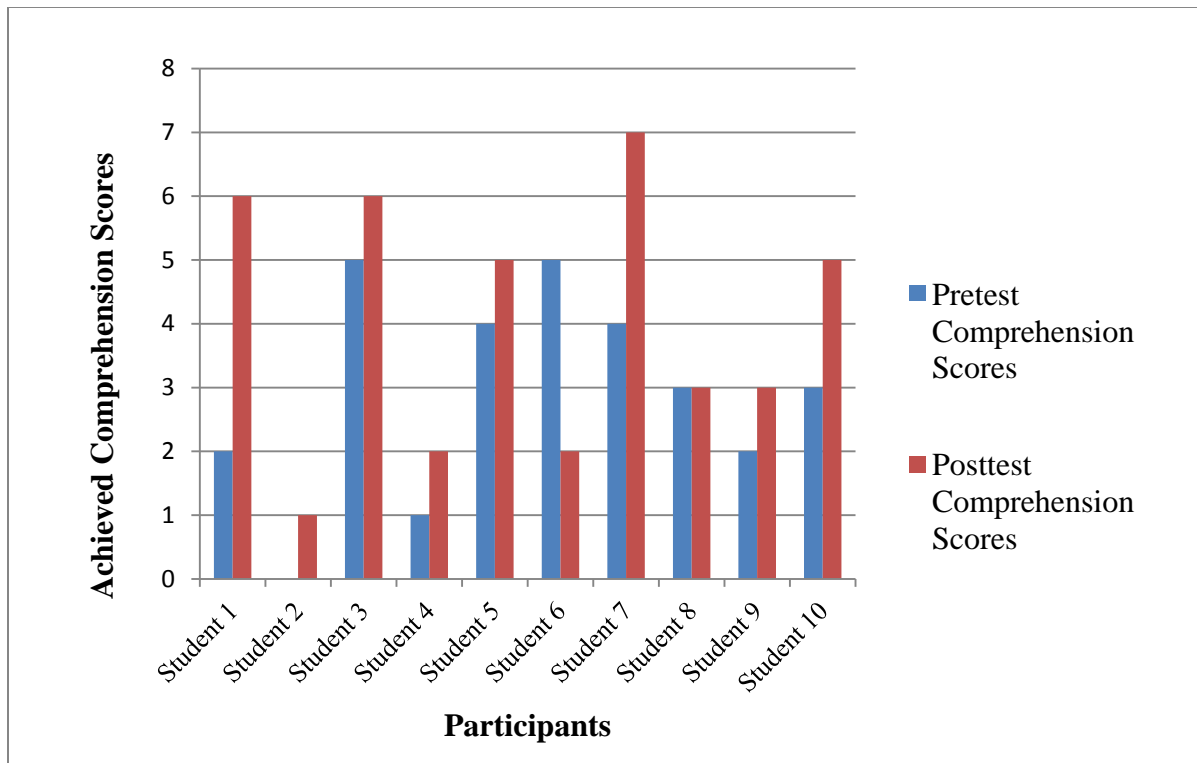


Figure 6. Pre-test and post-test results for QRI-5 comprehension.

The posttest comprehension results for the QRI-5 expository passage indicated that after the intervention, only two students did not improve their comprehension scores. Student One increased his score by answering four more questions correctly, receiving a 75%. Student Two answered one question correctly, obtaining a 13% and Student Three answered one additional question correctly, increasing to a score of 75%. Student Four increased her score by accurately answering one additional question and earning a 25%. Student Five also answered one more comprehension question accurately, receiving a score of 63%. Student Six answered three less questions correctly, decreasing her score to a 25%. Student Seven answered three more question correctly increasing her score to an 88% and Student Eight answered no additional questions correctly and maintained a score of 38%. Student Nine increased her score by answering one more comprehension question correctly, earning a 38%. Finally, Student Ten increased her score

by answering two additional questions correctly, receiving a 63%. The posttest mean was 4 or 40% (see Figure 6). Therefore, the difference in the pretest and posttest means was 11 or 11%.

A one-tail dependent *t*-test was used to test the researcher's hypothesis that students' comprehension would improve on the QRI-5 comprehension posttest, compared with their pretest scores. There was a difference in the scores for pretest ( $M=2.9$ ,  $SD= 1.7$ ) and the posttest ( $M=4$ ,  $SD=2.1$ );  $t(9)=0.046$ ,  $p = .05$ . The results suggested that the intervention was successful in improving students' ability to comprehend an expository passage.

This section analyzed the results of the data collected within this action research study. The final section will summarize the results.

## **Conclusion**

Throughout this chapter, an explanation of the research data collected was explained which both challenged and supported the action research question: Does text structure instruction, specifically compare/contrast and cause/effect, improve struggling third grader readers' comprehension of expository text within the science curriculum? The data collection for this action research project through the use of pre-testing, post-testing, and anecdotal notes determined that the weekly, explicit intervention including text structure instruction suggested there was an overall rise in recall of expository text, as well as comprehension for the majority of students. The text structure assessment results suggested that after a six week text structure intervention, students increased their ability to recall and comprehend expository text within a compare and contrast science passage. In addition, students also increased their recall and comprehension after the intervention, while reading a cause and effect science passage.

However, the gains were not as significant as the compare and contrast assessment. Further, the

QRI-5 results also suggested that the text structure intervention increased students' recall and comprehension after reading an expository science passage for the majority of students. The final chapter of this action research project illustrates a complete examination of the data obtained in regards to best practice research and Common Core Standards, a detailed examination of the results, various strengths and limitations apparent within the study, and the researcher's personal recommendations for future research.

## **CHAPTER FIVE: CONCLUSIONS**

The research conducted determined the effects of explicit text structure instruction, specifically compare and contrast and cause and effect, on struggling third grader readers' comprehension of expository text within the science curriculum. Data collected over 12 hours of intervention suggested growth in the majority of students' reading comprehension. Scores from the pretest were compared to scores from the posttest to determine progress. The action research participants were third grade students attending a public elementary school in southeastern Wisconsin. The students were selected for this research study because all students exhibited comprehension struggles in their classrooms especially within the science content area. The data collection suggested that the majority of students increased their recall and comprehension of expository text. Chapter Five will connect this intervention to the Common Core Standards, current research conducted in this area, as well as include an explanation of the results. Strengths and limitations for the study will be discussed, in addition to recommendations for further study.

### **Connection to the Common Core Standards**

Students' struggles with expository text are largely in part due to their unfamiliarity with the variety of text structures (e.g., description, sequence, compare-contrast, cause-effect, and problem-solution) and also because it more often deals with unfamiliar content (Block & Duffy, 2008; Williams et al., 2004). Therefore, expository text is generally more difficult to comprehend (Hall et al., 2005). To become successful literacy learners of expository text students need to understand the structure and arrangement of ideas as well as the relationships among the ideas to approach reading with a plan (Williams et al., 2004; Williams et al., 2005; Hall et al., 2005). Common Core Standards focusing on comprehension skills and strategies are supported by this research. According to the Common Core English Language Arts Standards

for Informational Text (2010) students should be able to determine the main idea of a text; recount the key details and explain how they support the main idea. Also, they need to describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). Further, compare and contrast the most important points and key details presented in two texts on the same topic. Throughout the intervention, there was an important emphasis placed upon these standards. The researcher used modeling and explicit text structure instruction to increase students' understanding of informational text, text structure, and identifying key details within a text.

### **Connection to Existing Research**

Recently, there has been a push for a greater presence of expository text in elementary classrooms. Research suggests that students in the elementary grades are likely to be suitable candidates for the focused comprehension instruction of expository text that has been found to be successful with older students (Hall et al., 2005). Expository text is particularly challenging because its content is usually unfamiliar. Multiple structures are used in expository texts: description, sequence, compare-contrast, problem-solution, and causation. Teaching elementary students about the various text structures may increase the knowledge they gain, thus improving text comprehension (Meyer & Ray, 2011). In addition, because students across grade levels struggle with reading and understanding nonfiction text, attention to increasing students' access to content-rich text in the primary grades has increased. Including texts as part of science instruction has positive effects on students' science learning (Cervetti, Bravo, Hiebert, Pearson, & Jaynes, 2009). Connections to research related to expository text, text structure, and content area literacy and the results of this action research study will be presented.

### **Expository Text**

The use of expository text in the classroom is vital if students are to acquire the necessary skills to gain understanding of informational text they encounter in content area studies in the upper grades, in information they encounter on the Internet, and in every day reading of newspapers, magazines, and documents (Benson, 2002). A study conducted by Maloch (2008) explored how non-fiction texts were used in an elementary classroom and the methods the teacher employed to scaffold students' understanding of the texts. The researcher observed the classrooms for a five-month period and students were provided with multiple exposures of non-fiction text within read alouds, guided reading groups, and independent reading. Within the classrooms, teachers guided student understanding of different texts by targeting key vocabulary, concepts, and promoting discussion to facilitate understanding. Maloch determined that the second grade readers in the classroom experienced and learned about non-fiction features and structures over time and within their learning community, rather than in isolated lessons. Further, she also discovered that with daily exposures to nonfiction text, students began to retell more than just isolated facts from the text, but main ideas with details to support.

Similar to the results discovered by Maloch, the results of this action research intervention suggested that for students to understand each text structure, students required multiple exposures to each expository text structure. Even after the intervention, students still did not have mastery of identifying cause and effect text structure and identifying cause and effect text structure relationships. Unlike Maloch's five month study, this intervention was conducted for a time period of only six weeks. The students in this study needed additional opportunities to interact with the cause and effect text structure in order to develop a deeper understanding. However, also similar to Maloch's study, the students in this action research study did learn

about expository text through working with one another. For example, students began previewing the text together as soon as I handed it out. They read the title, captions associated with pictures, headings, and bolded words. These were skills that the students were not implementing prior to the intervention.

### **Text Structure**

The instructional exposure to nonfiction texts is not enough (Benson, 2002). It is critical that teachers explicitly teach nonfiction text structure for students to begin developing an understanding of expository text. The way in which a text is written can help or hinder comprehension. For students' to gain, assess, and apply information successfully from nonfiction texts, it is necessary that they understand how this genre is organized (Hall et al., 2005). Williams et al. (2005) studied the effects of teaching students text structure as early as second grade to improve their comprehension of expository text. This research demonstrated that children as early as second grade are sensitive to text structure and would benefit from explicit comprehension instruction. The instruction focused on three strategies where students were taught how to use clue words to identify a text as compare and contrast, taught how to use a graphic organizer to organize the relevant information in the text, and taught a series of questions that would help them focus on the important information in the text (Williams et al., 2005). The researchers believed that when students were provided with the knowledge of text structure, they were able to create a mental framework to organize the important details learned in the reading. The successful study demonstrated that instruction focused on text structure helped second-grade students improve their comprehension of compare and contrast expository text.

Similar to the findings of the Williams et al. (2005) study this action research intervention explored the effectiveness of including explicit text structure instruction for students with low comprehension. The intervention focused on students understanding the compare and contrast and cause and effect text structure, identifying signal words, completing graphic organizers and a text frame paragraph, and answering content related comprehension questions. On the first day of the intervention, students were not able to identify the difference between narrative and expository texts; following the final session of intervention, students were able to differentiate the difference between the two types of text. In addition, as the intervention progressed, students' ability to locate signal words within the compare and contrast passage increased. However, the cause and effect passage did not find the same success, as students had a difficult time identifying signal words. Throughout the text structure intervention, students successfully filled out compare and contrast graphic organizers and text frame paragraphs with ease. Conversely, the cause and effect graphic organizers proved to be a greater challenge for the students to complete. Students had a difficult time identifying cause and effect relationships within the text. Overall, comparable to the Williams et al. (2005) study, students in this action research study did increase their comprehension after the text structure intervention. The results of this action research would suggest that when students had knowledge of text structure, they were able to organize the information learned into a mental framework, thus improving their recall and comprehension. Specifically, students compare and contrast results suggested more growth than the cause and effect structure. The Williams et al. (2007) study investigated the effectiveness of a cause and effect instruction program for at-risk second graders. The findings from their study were similar to the cause and effect results from this action research study.



The study conducted by Williams et al. (2007) studied the effectiveness of a comprehension program integrated with social studies instruction designed for at-risk second graders. The program included instruction in cause-effect text structure. During the intervention, prompts were given to students to locate clue words, and explicit instruction was given on how to identify cause-effect target paragraphs. Children who participated in the cause-effect text structure focus group demonstrated progress in comprehension. The researchers determined that the text structure group scored higher than the other groups on the effect questions, but there was no difference when answering questions about causes. This was possibly due to the fact that the cause and effect text structure is rather abstract for elementary students. It requires a higher level thinking that many elementary students may struggle to identify (Williams et al., 2007).

As with the results of the Williams et al. (2007) study, the cause and effect results of this action research study suggested similar finding. After the intervention students comprehension did increase, however, the gains were minimal. Further, throughout the intervention students struggled to identify cause and effect passages, as well as cause and effect relationships presented throughout the text.

### **Content Area Literacy**

Early exposure to exposition can establish a foundation for student understanding of the expository text that dominates in later grades. By sixth grade, more than 75% of students' reading demands in school are with expository text (Duke & Bennett-Armistead, 2003). Therefore, recent articles in reading and science education journals have urged that teachers use text to teach science and social studies (Cervetti et al., 2009). The challenge lies in how teachers are to successfully incorporate expository text reading into the content areas. Cervetti et al.

(2009) conducted a study regarding the effects of genre on students' reading of science text. The researchers wanted to investigate the question of what kinds of science text should be used when teaching science content. Therefore, the researchers selected two different science topics. For each topic, a fictional narrative and informational form of text was developed. The researchers collected their data through an oral retelling given by students, answers to nine comprehension questions, and a misconception analysis. When the researchers compared students' comprehension, recall of key ideas, and scientific misconceptions, the results pointed to limitations for conceptual learning from fictional narratives. The recall of key science concepts was more prevalent in the informational versions of the passages. The potential for fictional narratives to promote conceptual misunderstanding could be problematic for elementary students. The results of this study suggested that educators should examine assumptions about the role fictional narrative in content area instruction.

This action research study examined the effectiveness of text structure instruction on struggling readers' comprehension of expository text within the science curriculum. Although students' results suggested that the majority of students made growth in their comprehension scores, half of the students did not meet grade level expectations set by the school for reading comprehension. The participants in this study were struggling readers, half of them receiving an intense Leveled Literacy Intervention (Fountas & Pinnell, 2009) five days a week for 30 minutes from the school's reading specialist. Therefore, the type of text that is selected for these students when teaching content is crucial. The texts in this study were all expository. The results of the Cervetti et al. (2009) study are important to consider when examining the results of this action research study. Based on the results from the Cervetti et al. study, the selection of expository texts was appropriate. If narratives with content information embedded within increases students'

probability of creating misconceptions, then students who already struggle with comprehension could significantly decrease their chances of comprehending when narrative text is used. Similar to the results of this action research that suggested students increased their comprehension when reading expository texts, the students who read the informational text in the Cervetti et al. study performed higher on the recall and comprehension portion of the assessment than the students that read the narrative text.

### **Explanation of results**

Overall, the results of this research suggested that after the text structure intervention, the majority of students' recall and comprehension of expository text improved. The six week study was divided into two three week sections, compare and contrast text structure instruction, and then cause and effect text structure instruction. Each text structure intervention consisted of four main sections for each passage read: (a) activation of passage background knowledge and reviewing the text structure with students, (b) reading the text and highlighting of text structure signal words, (c) completion of the text structure graphic organizer, completion of text frame paragraph, and answering of comprehension questions and (d) rereading of text and verbal retelling.

Throughout the intervention, the researcher observed that the students were more comfortable working with the compare and contrast text structure than the cause and effect. By the end of the intervention, students were able to independently identify signal words within the compare and contrast passages. The completion of the compare and contrast graphic organizer (see Appendix C for a sample graphic organizer) was not difficult for students due to their previous experience using the graphic organizer within their classrooms. However, students

needed additional modeling to correctly complete the graphic organizers. Students were correctly placing facts in the appropriate sections, but not contrasting similar facts. Therefore, students were also incorrectly completing their text frame paragraphs (see Appendix E for a sample text frame). After explicit modeling, field notes and anecdotal notes indicated the students began to correctly complete both assignments. In addition, field notes and anecdotal notes indicated that the retelling of key ideas that students provided the researcher with after each compare and contrast passage increased significantly throughout the intervention, as well as answering content related comprehension questions. Comparable to the findings in the Williams et al. (2005), the researcher of this study believed that when students were provided with the knowledge of text structure, they were able to create a mental framework to organize the important details learned in the reading, therefore providing a more comprehensive retelling. The retelling posttest results of the compare and contrast text structure intervention suggested that all students, with the exception of Students 3 and 8, increased their retelling scores. In addition, the posttest comprehension results of the compare and contrast text structure intervention suggested that all students increased their pretest scores Scores increased by 39% from pretest to posttest. Because the participants were struggling readers, the researcher believed that answering comprehension questions was an easier task for students than providing a retelling. In the researcher's experience, she has found that struggling readers often have difficulty conveying a retelling when they are not prompted with questions or ideas to guide them.

Unlike the compare and contrast text structure intervention, students were not as familiar or as comfortable with the cause and effect text structure. After students read the cause and effect passage and attempted to complete the graphic organizer and text frame paragraph, it was obvious to the researcher that the majority of students had no previous experience working with

cause and effect relationships. The graphic organizers were not accurately filled out, thus also affecting the accuracy of the text frame. Throughout the intervention, students struggled with independently identifying signal words within the text. Additionally, identifying cause and effect relationships within the passage proved to be the students' most challenging task. The researcher began providing students with either a cause or an effect on the graphic organizer and students would have to complete the relationship. Students found more success when this was done, therefore improving their text frame paragraphs. The retelling of key ideas slightly improved throughout the intervention. The researcher does not believe that text structure was the source of this, rather the multiple encounters students had with the passage prior to the retelling was the cause for the effect. The posttest results suggested that seven students improved their pretest scores. Student Two retell key ideas in either the pretest or posttest. Student Three did not show improvement, and Student Eight decreased their posttest retelling score. The comprehension results suggested that all students, with the exception of Student Three, improved their comprehension score. Like the researcher had previously believed, the retelling proved to be more difficult for students as they have no prompts to guide their recall.

### **Strengths**

Several strengths contributed to the improvements the students demonstrated throughout the intervention. The daily intervention lesson was designed to be predictable for students. The students quickly understood the structure of the lesson and what would be required when a new passage was introduced. For each passage, the same lesson format was followed. After one week, the students were able to anticipate what was coming next, thus requiring less time for directions and more time for the students to be working.

Another contributing factor to the success of the intervention was the relationship between the students and the researcher. All students were in third grade. Prior to the start of the intervention in January, all students had been working with the researcher on comprehension strategies since the beginning of the school year. The relationship between the researcher and the students was comfortable and full of trust. There were no question about expectations or concerns with behavior as those were all established prior to the intervention. Additionally, the students were accustomed to the researcher's method of teaching and explicit modeling with gradual release to the student. This positive student-teacher relationship was a strength that added to the success of the intervention.

An additional factor that contributed to the success of this study was the timing of the intervention. The intervention occurred within the first hour of each school day. This created an optimal time for learning for the students because they were rested and ready to learn. Moreover, because the study was conducted with a group of 10 students, rather than an entire class this had a positive effect. Students were provided with the specific comprehension instruction that they needed. They were not hiding within the rest of the class as they tended to do in their regular education classrooms. Students participated, shared their thoughts, and took risks in the safety of the small group.

Further, the researcher believes the success of the intervention could also be attributed to the various activities that were required while reading each passage. Highlighting signal words, completing graphic organizers, and writing text frame paragraphs all required students to reread the text, think about the text, and write about the text. Therefore, this allowed students to think about the text prior to being required to present a retelling or answering comprehension questions. Prior to the intervention, when students read a passage, there was little thought

devoted to the ideas they would share when providing the retelling or answering comprehension questions.

### **Limitations**

Limitations to the study must also be noted. When students' background knowledge was activated prior to reading the passages, the researcher anecdotal notes suggested that students often had little to no background knowledge that they could share. In addition, their background knowledge was often full of misconceptions or irrelevant to what the passage content was going to be about. The majority of students came from low socioeconomic backgrounds, thus suggesting that their experiences outside the home may have been limited to acquire necessary background knowledge.

Another limitation was lack of motivation. By third grade, the majority of the students disliked reading and did not care about reading. Reading was challenging, and the students' teachers had noted that it was a challenge to encourage these students to put forth the effort necessary for comprehension. Although the content of the passages interested them, the work that was required was a discouraging task.

Furthermore, another limitation was the short time frame for the study. Six weeks is too limited to introduce two text structures to struggling readers. The cause and effect was the most difficult for students and definitely needed to be scaffolded. Three weeks to learn this text structure and apply it independently to increase comprehension, was not a sufficient amount of time. Also, the students were learning the skills in isolation. Thus, the text structures, signal words, graphic organizers, and text frames were not being used in the classroom where students could use them in a different setting, reinforcing the skills.

**Recommendations for further study**

Based on the results that were obtained as well as some of the strengths and limitations of this research, there are several recommendations the researcher would make to enhance the intervention. As alluded to in the limitations, the cause and effect structure is challenging for students due to the higher-level thinking required (Williams et al., 2007). As such, future research should investigate an appropriate grade level for students to be introduced to the cause and effect text structure to enhance comprehension. In addition, exploring the idea of introducing cause and effect to students using a narrative text rather than an expository text could provide educators with useful instructional information. It would also be beneficial for future research to devote attention to the concept of cause and effect using familiar content. Due to the students in this study having minimal background knowledge and several misconceptions, their ability to understand and develop cause and effect relationships could have been affected.

Another apparent shortcoming of the text structure intervention was that students with comprehension struggles were the only participants. Could the intervention have been successful with students who read at grade level? In addition, if the researcher would have used an entire class rather than 10 students, could that have changed the results of the study? Cause and effect text structure was difficult for struggling readers in third grade, however, would it be the same for all third graders?

Just as the researcher considers the appropriateness of the text structure, future research on various text structures would be beneficial. When educators are considering the various expository text structures to teach their students, (description, sequence, compare-contrast, cause-effect, and problem-solution) it would be beneficial to further study the hierarchy in which text



structures should be taught. This study suggested that students found more success when reading compare and contrast passages versus cause and effect. These structures were selected for this study because that is where previous research had been conducted. However, there is limited research available on the other structures. Perhaps another text structure would be more appropriate for third grade readers, specifically struggling readers, to learn to improve their reading comprehension of expository text.

Finally, the research conducted by Cervetti et al. (2009) which explored the effects of genre on students' reading of science text should be further studied, as well as effective comprehension strategies to increase elementary students' comprehension of expository text. This study used expository text to teach students about science content. As the Common Core Standards (2010) place a considerable emphasis on expository text in the elementary classroom, future studies exploring best practice for students' comprehension of expository text would be valuable. Students need to be prepared for the literacy demands that await them in their future schooling, and effective comprehension instruction is crucial for our young literacy learners.

## **Conclusion**

The present research suggests that teaching text structure, specifically compare and contrast and cause and effect, to struggling third grade readers improves their comprehension of expository text within the science curriculum. Despite being a relatively new area of interest in the field of literacy, one could make a strong case for the importance of expository text comprehension to children's literacy development. Facets of expository comprehension skill, such as an understanding of text structure and an ability to retell expository text, are identified in the new CCSS as literature benchmarks for elementary students. Prior research has also

identified correlations between specific expository text structure instruction and children's reading comprehension.

Along with establishing the significance of text structure instruction, previous research also examined the effectiveness of various instructional techniques in promoting students' expository text comprehension. Numerous exposures to expository text, identifying signal words, and completing graphic organizers all positively impacted students' comprehension skills; thus, elements from each of these techniques were utilized in this text structure intervention.

The effectiveness of this text structure intervention was measured through two dependent variables: students' recall of key ideas and correct answers to content comprehension questions. Based on an analysis of the data that was obtained, this intervention was deemed effective at improving participants' understanding of expository text within the science curriculum. The results of students' recall and comprehension of the compare and contrast text structure suggested a greater improvement from pretest to posttest than students' cause and effect results leading the researcher to believe that compare and contrast is a more appropriate text structure for third grade students to understand and apply to their reading.

This study has added to the research base on expository text comprehension by examining the effects of a text structure intervention that could be replicated in other general education classrooms and small group instruction. This action research design did, however, present limitations in regards to the short time frame in which the research was conducted. In addition, due to the participants being struggling readers, there was low motivation for reading and learning. Further, students' background knowledge was limited and contained several misconceptions about the content of the science passages. By investigating how such

modifications affect student outcomes, future research can continue to refine and improve upon the text structure intervention presented here.

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## Appendix A

### Crocodiles and Alligators

Crocodiles and alligators are large, frightful-looking reptiles. They are both reptiles because they have tough, scaly skin and are cold-blooded.

Both crocodiles and alligators bury their eggs in sand or mud until their babies hatch. Very young crocodiles and alligators eat worms and insects. Adults eat mammals and are even known to attack humans.

Crocodiles and alligators are also similar because they swim by sweeping their tails from side to side in the water.

How can you tell a crocodile apart from an alligator?

The main difference is that a crocodile has a narrow snout that comes to a point at the tip, and the fourth lower tooth is always visible even when the crocodile's mouth is closed. An alligator, on the other hand, has a broad, not sharp snout. Its fourth lower tooth cannot be seen when the alligator's mouth is closed.

In addition, alligators are less aggressive and move more slowly than crocodiles. They are also not as large. Crocodiles are known to have grown as long as 23 feet. In contrast, alligators grow to be about 15 feet long.



Crocodile



Alligator

## Appendix B

### Sea Turtles

Sea turtles face many dangers, especially from humans. People take over turtles' habitats by building hotels and houses on the beach. Some people also bother nests when they are playing on the beaches. This makes it difficult for mother turtles to find safe places to dig nests and lay their eggs in the sand.

In some areas of the world sea turtles are hunted by people. Their eggs are eaten for food. Their shells are used to make jewelry and even guitars. Some suntan lotions are made with turtle oil.

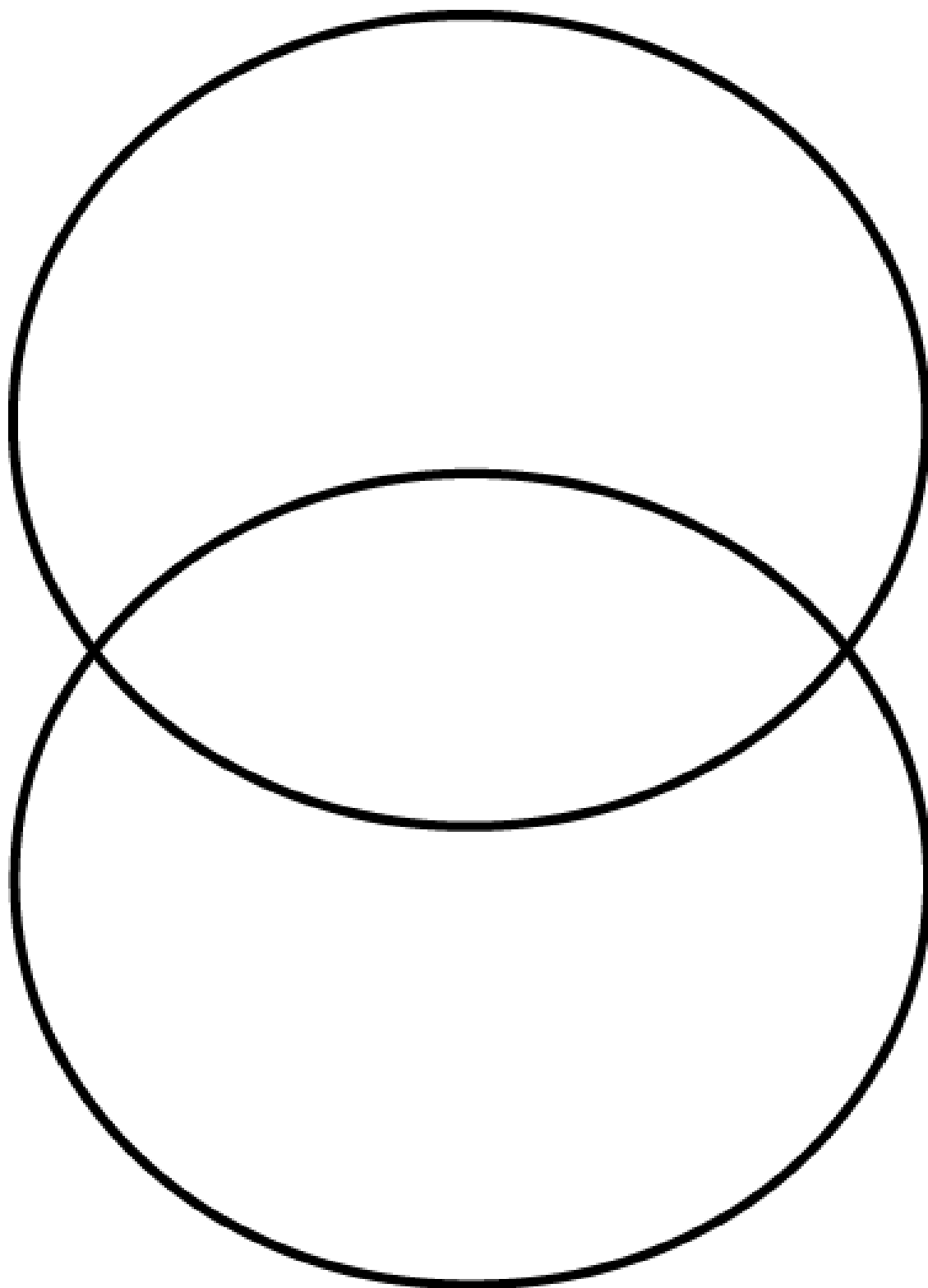
People can hurt sea turtles without even knowing it. Dumping garbage in the ocean, like plastic bags and balloons, really hurts sea turtles. To a turtle, a floating plastic bag or balloon can look like food. Sea turtles get very sick when they eat this kind of trash.

As a result of these dangers, sea turtles are in endangered. That means, there are not many of them left.



Appendix C

Compare & Contrast Article: \_\_\_\_\_



## Appendix D

Cause & Effect Article: \_\_\_\_\_

[illegible]

**Appendix E****Compare & Contrast Text Structure Writing Frame**

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Title of Article

\_\_\_\_\_ and \_\_\_\_\_ are similar and different. Both

\_\_\_\_\_ and \_\_\_\_\_ have \_\_\_\_\_

They also \_\_\_\_\_

\_\_\_\_\_.

On the other hand, there are some differences as well. One way they differ is

\_\_\_\_\_

\_\_\_\_\_. Another

difference is \_\_\_\_\_

\_\_\_\_\_.

Now you know some facts that are the \_\_\_\_\_ and

\_\_\_\_\_ about \_\_\_\_\_ and

\_\_\_\_\_.

**Appendix F****Cause & Effect Text Structure Writing Frame**

---

Title of Article

There are several cause and effect relationships within this article. One cause is

\_\_\_\_\_. The effect of this is

\_\_\_\_\_  
\_\_\_\_\_.

A second cause within this article \_\_\_\_\_

\_\_\_\_\_.

The effect of this cause is \_\_\_\_\_

\_\_\_\_\_.

A third cause is \_\_\_\_\_

\_\_\_\_\_. The effect of this cause

is \_\_\_\_\_

\_\_\_\_\_.

## Appendix G

## Text Frame Paragraph Rubric

2 points	1 point	0 point
<ul style="list-style-type: none"><li>• Students have written information about the passage in the correct text frame.</li><li>• All information included within the text frame paragraph is accurate and reflects the text.</li></ul>	<p>Students have one of the following:</p> <ul style="list-style-type: none"><li>• Students have written information about the passage in the correct text frame.</li><li>• The majority of information within the text frame paragraph is accurate and reflects the text.</li></ul>	<p>Students have included neither of the following:</p> <ul style="list-style-type: none"><li>• Students have written information about the passage in the incorrect text frame.</li><li>• Information included within the text frame paragraph is not accurate and does not reflect the text.</li></ul>

**Appendix H****Crocodiles & Alligators Key Ideas**

- \_\_\_\_\_ Crocodiles and alligators are large, frightful-looking reptiles.
- \_\_\_\_\_ Both reptiles.
- \_\_\_\_\_ Both bury eggs in sand or mud.
- \_\_\_\_\_ Their young eat worms and insects.
- \_\_\_\_\_ Adults eat mammals and possibly humans.
- \_\_\_\_\_ Crocodile has narrow snout.
- \_\_\_\_\_ Alligator has a broad snout.
- \_\_\_\_\_ Alligators are less aggressive, and move more slowly.
- \_\_\_\_\_ Crocodiles grow to be 23 feet long.
- \_\_\_\_\_ Alligators grow to be 15 feet long.



## Appendix I

### Sea Turtle Key Ideas

- \_\_\_\_\_ Sea turtles face many dangers- especially for humans.
- \_\_\_\_\_ Turtles are losing habitats due to building hotels and house on beaches.
- \_\_\_\_\_ This makes it difficult for mother turtles to find safe places to dig nests to lay their eggs.
- \_\_\_\_\_ Sea turtles are hunted by people to use their eggs, shells for jewelry and even guitars.
- \_\_\_\_\_ Some suntan lotions are made with turtle oil.
- \_\_\_\_\_ People can hurt sea turtles.
- \_\_\_\_\_ Dumping garbage hurts sea turtles.
- \_\_\_\_\_ Sea turtles get very sick when they eat trash.
- \_\_\_\_\_ As a result, sea turtles are endangered.
- \_\_\_\_\_ Endangered means there are not many of them left.

## Appendix J

### Crocodiles & Alligators Comprehension Questions

Answer the following questions after reading the passage.

1. What is a similarity between crocodiles and alligators?
2. What is another similarity between crocodiles and alligators?
3. Where do crocodiles and alligators bury their eggs?
4. How can you tell a crocodile apart from an alligator?
5. What is another difference between a crocodile and an alligator?
6. How do alligators and crocodiles swim?
7. What do crocodiles and alligators eat?
8. What is the difference between an alligator's snout and a crocodile's snout?
9. Where do you think crocodiles and alligators live?

## **Appendix K**

### **Sea Turtle Comprehension Questions**

Answer the following questions after reading the passage.

1. What is a danger sea turtles face?
2. Name one way that humans are dangerous to sea turtles?
3. What is another way that humans are dangerous to sea turtles?
4. When sea turtles are hunted, what are they used for?
5. What is another thing that sea turtles are used for when hunted?
6. Why is it dangerous to sea turtles when people dump garbage in the ocean?
7. What happens to sea turtles when they eat trash?
8. What is the effect of people dumping trash in oceans and hunting sea turtles?
9. What does the word endangered mean?
10. What are some ways that sea turtles could stop from being endangered?

## Appendix L

## Level: Two

## Expository

**Concept Questions:**

How do whales breathe?

(3-2-1-0)

What does “baby animals staying with their mother” mean to you?

(3-2-1-0)

How are baby fish born?

(3-2-1-0)

Score: \_\_\_\_\_ /9 = \_\_\_\_\_ %

\_\_\_\_\_ FAM      \_\_\_\_\_ UNFAM

**Prediction:**

---

## "Whales and Fish"

Whales and fish both live in the water, but they are different in many ways. Whales are large animals that live in the water. Even though whales live in the water, they must come to the top of the water to get air. When they come to the top of the water,



whales breathe in air through a hole in the top of their heads. At the same time they blow out old air. Whales don't get air like fish. Fish take in air from the water.

Mother whales give birth to live whales. The baby whale must come to the top of the water right away for air. The baby drinks milk from its mother for about a year. Then it finds its own food. Fish have babies in a different way. Most mother fish lay eggs. The babies are born when the eggs hatch. Right after they are born, the baby fish must find their own food.

Whales and fish are alike in some ways too. Whales and fish have flippers on their sides. They also have fins on their tails. Flippers and fins help whales and fish swim. Fins move and push the water away. (197 words)

Number of Total Miscues  
(Total Accuracy): \_\_\_\_\_

Number of Meaning-Change Miscues  
(Total Acceptability): \_\_\_\_\_

Total	Total
Accuracy	Acceptability

0-4 miscues      \_\_\_\_\_ Independent      \_\_\_\_\_ 0-4 miscues

5-20 miscues \_\_\_\_\_ Instructional \_\_\_\_\_ 5-10 miscues

21+ miscues \_\_\_\_\_ Frustration \_\_\_\_\_ 11+ miscues

**Rate:**  $197 \times 60 = 11,820 / \text{_____ seconds} = \text{_____ WPM}$

Correct WPM:  $(197 - \text{errors}) \times 60 =$   
 $\text{---} / \text{---} \text{ seconds} = \text{---} \text{ CWPM}$



